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<120> Chlamydia Pneumoniae Genome Sequence

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42

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48

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121

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122

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223

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224

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225

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atctatcttt ccaaaaacgc tctatagcat cggagagctt cctttttaaag atcgatagtg 1228500
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taggagaaga ccctgaggtc gttcaagctg ttgggtctgc ttgtataggt tggggcatga 1228680
acttttttagg cctggtatac tatcctgctc aagaaagcct tttttcttat gttcatcctt 1228740
actctacagc aacggagctc caagaagcac agggtttaca agtaatttca gatgaagtcg 1228800
cacagcttac tttaaacgct cttccgaaaa tgaattaaca tgatgttaga acaacaagcc 1228860
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tcttttcttg tcgattatga attggtgagc gcgaacttaa ggaatgtact cacaggctta 1229340
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tagagaagat ggccgagtag tgaagacgaa ttcttagaga aaaattagag tgttttcttg 1230180
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```

<210> 2
<211> 109
<212> PRT
<213> Chlamydia pneumoniae

<400> 2

```
Lys Arg Leu Lys Asp Glu Ile Lys Tyr Thr Ser Leu Arg Arg Lys Ala
1               5                   10                  15
Met Leu Gly Lys Ile Ile Arg Gly Leu Ser Ser Leu Ile Val Ile Leu
            20                  25                  30
Cys Ala Leu Asn Val Gly Leu Ile Gly Ile Thr His Asn Lys Leu Asn
        35                  40                  45
Ile Ile Ala Lys Leu Cys Gly Gly Val Ser Thr Pro Ala Thr Gln Ile
    50                  55                  60
Thr Tyr Ile Ile Ile Gly Ile Ala Gly Val Ile Cys Leu Leu Ser Phe
65                  70                  75                  80
Cys Pro Phe Cys Ser Lys Lys Ser Arg His Ser His Gly Asp Ser Cys
                85                  90                  95
Ser Ser Gly Gly Cys His Ser His His Ser Asp Lys Asn
            100                 105
```

337

```
<210> 3
<211> 102
<212> PRT
<213> Chlamydia pneumoniae

<400> 3
His Met Glu Gln Phe His Leu Asp Arg Glu Glu Ile Leu Leu Leu Ala
1               5                   10                  15
Lys Ala Ser Ala Leu Gln Leu Ser Glu Glu Leu Ile Gln Glu Tyr Gln
            20                  25                  30
Thr Ser Leu Ser Ala Val Ile Thr Ser Met Lys Glu Ala Leu Ala Ile
        35                  40                  45
Glu Ile Asp Asp Ala Asp Ser Cys Glu Ser Leu Phe Met His Val Val
    50                  55                  60
Asn Val Glu Asp Leu Arg Glu Asp Ser Val Thr Ser Asp Phe Asn Arg
65                  70                  75                  80
Glu Glu Phe Leu Arg Asn Val Pro Glu Ser Leu Gly Gly Leu Val Lys
            85                  90                  95
Val Pro Ala Val Ile Lys
            100


<210> 4
<211> 494
<212> PRT
<213> Chlamydia pneumoniae

<400> 4
Lys Ile Met Tyr Arg Tyr Ser Ala Leu Glu Leu Ala Lys Ala Val Thr
1               5                   10                  15
Leu Gly Glu Leu Thr Ala Thr Gly Val Thr Gln His Phe Phe His Arg
            20                  25                  30
Ile Glu Glu Ala Glu Gly Gln Val Gly Ala Phe Ile Ser Leu Cys Lys
        35                  40                  45
Glu Gln Ala Leu Glu Gln Ala Glu Leu Ile Asp Lys Lys Arg Ser Arg
    50                  55                  60
Gly Glu Pro Leu Gly Lys Leu Ala Gly Val Pro Val Gly Ile Lys Asp
65                  70                  75                  80
Asn Ile His Val Thr Gly Leu Lys Thr Thr Cys Ala Ser Arg Val Leu
            85                  90                  95
Glu Asn Tyr Gln Pro Pro Phe Asp Ala Thr Val Val Glu Arg Ile Lys
            100                 105                 110
Lys Glu Asp Gly Ile Ile Leu Gly Lys Leu Asn Met Asp Glu Phe Ala
        115                 120                 125
Met Gly Ser Thr Thr Leu Tyr Ser Ala Phe His Pro Thr His Asn Pro
    130                 135                 140
Trp Asp Leu Ser Arg Val Pro Gly Gly Ser Ser Gly Gly Ser Ala Ala
145                 150                 155                 160
Ala Val Ser Ala Arg Phe Cys Pro Val Ala Leu Gly Ser Asp Thr Gly
                165                 170                 175
Gly Ser Ile Arg Gln Pro Ala Ala Phe Cys Gly Val Val Gly Phe Lys
            180                 185                 190
Pro Ser Tyr Gly Ala Val Ser Arg Tyr Gly Leu Val Ala Phe Ala Ser
            195                 200                 205
Ser Leu Asp Gln Ile Gly Pro Leu Ala Asn Thr Val Glu Asp Val Ala
    210                 215                 220
Leu Met Met Asp Val Phe Ser Gly Arg Asp Pro Lys Asp Ala Thr Ser
225                 230                 235                 240
Arg Glu Phe Phe Arg Asp Ser Phe Met Ser Lys Leu Ser Thr Glu Val
                245                 250                 255
Pro Lys Val Ile Gly Val Pro Arg Thr Phe Leu Glu Gly Leu Arg Asp
            260                 265                 270
```

```
Asp Ile Arg Glu Asn Phe Phe Ser Ser Leu Ala Ile Phe Glu Gly Glu
        275                 280                 285
Gly Thr His Leu Val Asp Val Glu Leu Asp Ile Leu Ser His Ala Val
    290                 295                 300
Ser Ile Tyr Tyr Ile Leu Ala Ser Ala Glu Ala Ala Thr Asn Leu Ala
305                 310                 315                 320
Arg Phe Asp Gly Val Arg Tyr Gly Tyr Arg Ser Pro Gln Ala His Thr
            325                 330                 335
Ile Ser Gln Leu Tyr Asp Leu Ser Arg Gly Glu Gly Phe Gly Lys Glu
        340                 345                 350
Val Met Arg Arg Ile Leu Leu Gly Asn Tyr Val Leu Ser Ala Glu Arg
        355                 360                 365
Gln Asn Val Tyr Tyr Lys Lys Ala Thr Ala Val Arg Ala Lys Ile Val
    370                 375                 380
Lys Ala Phe Arg Thr Ala Phe Glu Lys Cys Glu Ile Leu Ala Met Pro
385                 390                 395                 400
Val Cys Ser Ser Pro Ala Phe Glu Ile Gly Glu Ile Leu Asp Pro Val
            405                 410                 415
Thr Leu Tyr Leu Gln Asp Ile Tyr Thr Val Ala Met Asn Leu Ala Tyr
        420                 425                 430
Leu Pro Ala Ile Ala Val Pro Ser Gly Phe Ser Lys Glu Gly Leu Pro
        435                 440                 445
Leu Gly Leu Gln Ile Ile Gly Gln Gln Gly Gln Asp Gln Gln Val Cys
    450                 455                 460
Gln Val Gly Tyr Ser Phe Gln Glu His Ala Gln Ile Lys Gln Leu Phe
465                 470                 475                 480
Ser Lys Arg Tyr Ala Lys Ser Val Val Leu Gly Gly Gln Ser
            485                 490
```

        <210> 5
        <211> 500
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 5
```
Glu Ile Cys Gln Lys Cys Cys Ser Arg Arg Ser Ile Met Ser Ala Val
1               5                   10                  15
Tyr Ala Asp Trp Glu Ser Val Ile Gly Leu Glu Val His Val Glu Leu
            20                  25                  30
Asn Thr Ala Ser Lys Leu Phe Ser Ser Ala Leu Asn Arg Phe Gly Asp
        35                  40                  45
Glu Pro Asn Thr Asn Ile Ser Thr Val Cys Thr Gly Leu Pro Gly Ser
    50                  55                  60
Leu Pro Val Leu Asn Gln Ser Ala Val Glu Lys Ala Val Leu Phe Gly
65                  70                  75                  80
Cys Ala Val Glu Gly Glu Ile Ser Leu Leu Ser Arg Phe Asp Arg Lys
            85                  90                  95
Ser Tyr Phe Tyr Pro Asp Ser Pro Arg Asn Phe Gln Ile Thr Gln Phe
            100                 105                 110
Glu His Pro Ile Ile Arg Gly Gly Arg Ile Lys Ala Ile Val Gln Gly
    115                 120                 125
Glu Glu Arg Tyr Phe Glu Leu Ala Gln Thr His Ile Glu Asp Asp Ala
    130                 135                 140
Gly Met Leu Lys His Phe Gly Glu Phe Ala Gly Val Asp Tyr Asn Arg
145                 150                 155                 160
Ala Gly Val Pro Leu Ile Glu Ile Val Ser Lys Pro Cys Met Phe Cys
            165                 170                 175
Pro Glu Asp Ala Val Ala Tyr Ala Thr Ser Leu Val Ser Leu Leu Asp
        180                 185                 190
Tyr Ile Gly Ile Ser Asp Cys Asn Met Glu Glu Gly Ser Ile Arg Phe
        195                 200                 205
```

339

Asp Val Asn Val Ser Val Arg Pro Lys Gly Ser Pro Glu Leu Arg Asn
    210   215   220

Lys Val Glu Ile Lys Asn Met Asn Ser Phe Ala Phe Met Ala Gln Ala
225   230   235   240

Leu Glu Ala Glu Lys Gln Arg Gln Ile Asp Glu Tyr Leu Asn Gln Pro
                245   250   255

Asn Lys Asp Pro Lys Leu Val Ile Pro Ala Ala Thr Tyr Arg Trp Asp
            260   265   270

Pro Glu Lys Lys Lys Thr Val Leu Met Arg Leu Lys Glu Ser Ala Glu
            275   280   285

Asp Tyr Lys Tyr Phe Pro Glu Pro Asp Leu Pro Thr Leu Gln Leu Thr
    290   295   300

Glu Ser Tyr Ile Glu Arg Ile Arg Lys Thr Leu Pro Glu Leu Pro Tyr
305   310   315   320

Asp Lys Tyr His Arg Tyr Ile Gln Glu Tyr Gly Leu Ser Glu Asp Ile
                325   330   335

Ala Ser Ile Leu Ile Ser Asp Lys Asn Ile Ala Thr Phe Phe Glu Val
            340   345   350

Ala Cys Lys Asp Cys Lys Asn Phe Arg Ser Leu Ser Asn Trp Val Thr
            355   360   365

Val Glu Phe Gly Gly Arg Cys Lys Thr Leu Gly Val Lys Leu Pro Ser
    370   375   380

Ser Gly Ile Phe Pro Glu Gly Val Ala Gln Leu Val Asn Ala Ile Asp
385   390   395   400

Gln Gly Val Ile Thr Gly Lys Ile Ala Lys Glu Ile Ala Asp Leu Met
                405   410   415

Met Glu Ser Pro Gly Lys Asn Pro Glu Glu Ile Leu Lys Glu Lys Pro
            420   425   430

Glu Leu Leu Pro Met Ser Asp Glu Gly Glu Leu Gln Lys Ile Ile Ala
            435   440   445

Glu Val Val Leu Ala Asn Pro Glu Ser Ile Val Asp Tyr Lys Asn Gly
    450   455   460

Lys Thr Lys Ala Leu Gly Phe Leu Val Gly Gln Ile Met Lys Arg Thr
465   470   475   480

Ala Gly Lys Ala Pro Pro Lys Arg Val Asn Glu Leu Leu Leu Leu Glu
                485   490   495

Leu Asp Lys Gly
            500

    <210> 6
    <211> 932
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 6
Ser Asp Ile His Phe Asp Leu Gly Thr Lys Met Arg Phe Ser Leu Cys
1   5   10   15
Gly Phe Pro Leu Val Phe Ser Phe Thr Leu Leu Ser Val Phe Asp Thr
            20   25   30
Ser Leu Ser Ala Thr Thr Ile Ser Leu Thr Pro Glu Asp Ser Phe His
    35   40   45
Gly Asp Ser Gln Asn Ala Glu Arg Ser Tyr Asn Val Gln Ala Gly Asp
    50   55   60
Val Tyr Ser Leu Thr Gly Asp Val Ser Ile Ser Asn Val Asp Asn Ser
65   70   75   80
Ala Leu Asn Lys Ala Cys Phe Asn Val Thr Ser Gly Ser Val Thr Phe
                85   90   95
Ala Gly Asn His His Gly Leu Tyr Phe Asn Asn Ile Ser Ser Gly Thr
            100   105   110
Thr Lys Glu Gly Ala Val Leu Cys Cys Gln Asp Pro Gln Ala Thr Ala
    115   120   125

                340

```
Arg Phe Ser Gly Phe Ser Thr Leu Ser Phe Ile Gln Ser Pro Gly Asp
    130                 135             140
Ile Lys Glu Gln Gly Cys Leu Tyr Ser Lys Asn Ala Leu Met Leu Leu
145                 150             155                 160
Asn Asn Tyr Val Val Arg Phe Glu Gln Asn Gln Ser Lys Thr Lys Gly
                165             170             175
Gly Ala Ile Ser Gly Ala Asn Val Thr Ile Val Gly Asn Tyr Asp Ser
                180             185             190
Val Ser Phe Tyr Gln Asn Ala Ala Thr Phe Gly Gly Ala Ile His Ser
        195             200             205
Ser Gly Pro Leu Gln Ile Ala Val Asn Gln Ala Glu Ile Arg Phe Ala
        210             215             220
Gln Asn Thr Ala Lys Asn Gly Ser Gly Gly Ala Leu Tyr Ser Asp Gly
225             230             235                 240
Asp Ile Asp Ile Asp Gln Asn Ala Tyr Val Leu Phe Arg Glu Asn Glu
                245             250             255
Ala Leu Thr Thr Ala Ile Gly Lys Gly Gly Ala Val Cys Cys Leu Pro
                260             265             270
Thr Ser Gly Ser Ser Thr Pro Val Pro Ile Val Thr Phe Ser Asp Asn
        275             280             285
Lys Gln Leu Val Phe Glu Arg Asn His Ser Ile Met Gly Gly Gly Ala
    290             295             300
Ile Tyr Ala Arg Lys Leu Ser Ile Ser Ser Gly Gly Pro Thr Leu Phe
305             310             315                 320
Ile Asn Asn Ile Ser Tyr Ala Asn Ser Gln Asn Leu Gly Gly Ala Ile
                325             330             335
Ala Ile Asp Thr Gly Gly Glu Ile Ser Leu Ser Ala Glu Lys Gly Thr
                340             345             350
Ile Thr Phe Gln Gly Asn Arg Thr Ser Leu Pro Phe Leu Asn Gly Ile
                355             360             365
His Leu Leu Gln Asn Ala Lys Phe Leu Lys Leu Gln Ala Arg Asn Gly
    370             375             380
Tyr Ser Ile Glu Phe Tyr Asp Pro Ile Thr Ser Glu Ala Asp Gly Ser
385             390             395                 400
Thr Gln Leu Asn Ile Asn Gly Asp Pro Lys Asn Lys Glu Tyr Thr Gly
                405             410             415
Thr Ile Leu Phe Ser Gly Glu Lys Ser Leu Ala Asn Asp Pro Arg Asp
                420             425             430
Phe Lys Ser Thr Ile Pro Gln Asn Val Asn Leu Ser Ala Gly Tyr Leu
    435             440             445
Val Ile Lys Glu Gly Ala Glu Val Thr Val Ser Lys Phe Thr Gln Ser
    450             455             460
Pro Gly Ser His Leu Val Leu Asp Leu Gly Thr Lys Leu Ile Ala Ser
465             470             475                 480
Lys Glu Asp Ile Ala Ile Thr Gly Leu Ala Ile Asp Ile Asp Ser Leu
                485             490             495
Ser Ser Ser Ser Thr Ala Ala Val Ile Lys Ala Asn Thr Ala Asn Lys
            500             505             510
Gln Ile Ser Val Thr Asp Ser Ile Glu Leu Ile Ser Pro Thr Gly Asn
    515             520             525
Ala Tyr Glu Asp Leu Arg Met Arg Asn Ser Gln Thr Phe Pro Leu Leu
    530             535             540
Ser Leu Glu Pro Gly Ala Gly Gly Ser Val Thr Val Thr Ala Gly Asp
545             550             555                 560
Phe Leu Pro Val Ser Pro His Tyr Gly Phe Gln Gly Asn Trp Lys Leu
                565             570             575
Ala Trp Thr Gly Thr Gly Asn Lys Val Gly Glu Phe Phe Trp Asp Lys
            580             585             590
Ile Asn Tyr Lys Pro Arg Pro Glu Lys Glu Gly Asn Leu Val Pro Asn
            595             600             605
```

341

Ile Leu Trp Gly Asn Ala Val Asp Val Arg Ser Leu Met Gln Val Gln
    610   615   620
Glu Thr His Ala Ser Ser Leu Gln Thr Asp Arg Gly Leu Trp Ile Asp
625   630   635   640
Gly Ile Gly Asn Phe Phe His Val Ser Ala Ser Glu Asp Asn Ile Arg
                645   650   655
Tyr Arg His Asn Ser Gly Gly Tyr Val Leu Ser Val Asn Asn Glu Ile
                660   665   670
Thr Pro Lys His Tyr Thr Ser Met Ala Phe Ser Gln Leu Phe Ser Arg
                675   680   685
Asp Lys Asp Tyr Ala Val Ser Asn Asn Glu Tyr Arg Met Tyr Leu Gly
    690   695   700
Ser Tyr Leu Tyr Gln Tyr Thr Thr Ser Leu Gly Asn Ile Phe Arg Tyr
705   710   715   720
Ala Ser Arg Asn Pro Asn Val Asn Val Gly Ile Leu Ser Arg Arg Phe
                725   730   735
Leu Gln Asn Pro Leu Met Ile Phe His Phe Leu Cys Ala Tyr Gly His
                740   745   750
Ala Thr Asn Asp Met Lys Thr Asp Tyr Ala Asn Phe Pro Met Val Lys
            755   760   765
Asn Ser Trp Arg Asn Asn Cys Trp Ala Ile Glu Cys Gly Gly Ser Met
    770   775   780
Pro Leu Leu Val Phe Glu Asn Gly Arg Leu Phe Gln Gly Ala Ile Pro
785   790   795   800
Phe Met Lys Leu Gln Leu Val Tyr Ala Tyr Gln Gly Asp Phe Lys Glu
                805   810   815
Thr Thr Ala Asp Gly Arg Arg Phe Ser Asn Gly Ser Leu Thr Ser Ile
            820   825   830
Ser Val Pro Leu Gly Ile Arg Phe Glu Lys Leu Ala Leu Ser Gln Asp
            835   840   845
Val Leu Tyr Asp Phe Ser Phe Ser Tyr Ile Pro Asp Ile Phe Arg Lys
    850   855   860
Asp Pro Ser Cys Glu Ala Ala Leu Val Ile Ser Gly Asp Ser Trp Leu
865   870   875   880
Val Pro Ala Ala His Val Ser Arg His Ala Phe Val Gly Ser Gly Thr
                885   890   895
Gly Arg Tyr His Phe Asn Asp Tyr Thr Glu Leu Leu Cys Arg Gly Ser
                900   905   910
Ile Glu Cys Arg Pro His Ala Arg Asn Tyr Asn Ile Asn Cys Gly Ser
        915   920   925
Lys Phe Arg Phe
    930

    <210> 7
    <211> 53
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 7
Lys Gln Leu Gln Glu Pro Leu Arg Ser Ala Leu Leu Glu Arg Leu Ser
1   5   10   15
Glu Trp Leu Val Leu Leu Gly Val Pro Ser Pro Glu Thr Thr Arg Ser
            20   25   30
Thr Pro Glu Lys Asp Ala Asn Gln Leu Pro Lys Asp Ser Arg Asn Arg
            35   40   45
Thr Leu Glu Ser Leu
    50

342

<210> 8
<211> 1003
<212> PRT
<213> Chlamydia pneumoniae

<400> 8

```
Lys Ser Phe Arg Tyr Asn Leu Ser Leu Ile Phe Ser Phe Leu Val Val
1               5                   10                  15
Ile Pro Leu Thr Asp Ser Thr Thr Ser Ser Leu Ser Thr Ser Leu Leu
            20                  25                  30
Asp Glu Gly Asn Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile
        35                  40                  45
Val Leu Ile Ala Leu Ser Ile Ile Leu Ile Ala Gly Gly Val Val Leu
    50                  55                  60
Leu Thr Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala
65                  70                  75                  80
Gly Met Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile
                85                  90                  95
Asp Val Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val
            100                 105                 110
Thr Thr Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser
        115                 120                 125
Gly Ala Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Leu Leu Asp Glu
    130                 135                 140
Gly His Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu
145                 150                 155                 160
Ile Val Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr
                165                 170                 175
Val Ala Ile Pro Gly Leu Ser Ser Val Ile Ser Ser Pro Ala Gly Met
            180                 185                 190
Gly Ala Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val
        195                 200                 205
Leu Leu Lys Lys Arg Glu Val Pro Ile Val Leu Ala Ser Val Thr Thr
    210                 215                 220
Thr Pro Gly Thr Gly Ser Pro Arg Ser Gly Ile Ser Ile Ser Gly Ala
225                 230                 235                 240
Asp Ser Thr Ile Arg Ser Leu Pro Thr Tyr Pro Leu Asp Glu Gly His
                245                 250                 255
Pro Gln Ser Met Arg Lys Leu Arg Ile Leu Ala Ile Val Leu Ile Val
            260                 265                 270
Phe Ser Ile Ile Leu Ile Ala Ser Gly Val Val Leu Leu Thr Val Ala
        275                 280                 285
Ile Pro Gly Leu Ser Ser Ile Ile Ser Ser Pro Ala Glu Met Gly Ala
    290                 295                 300
Cys Ala Leu Gly Cys Val Met Leu Ala Leu Gly Ile Asp Val Leu Leu
305                 310                 315                 320
Lys Lys Arg Glu Val Pro Ile Val Val Pro Ala Pro Ile Pro Glu Glu
                325                 330                 335
Val Val Ile Asp Asp Ile Asp Glu Glu Ser Ile Arg Leu Gln Gln Glu
            340                 345                 350
Ala Glu Ala Ala Leu Ala Arg Leu Pro Glu Glu Met Ser Ala Phe Glu
        355                 360                 365
Gly Tyr Ile Lys Val Val Glu Ser His Leu Glu Asn Met Lys Ser Leu
    370                 375                 380
Pro Tyr Asp Gly His Gly Leu Glu Glu Lys Thr Lys His Gln Ile Arg
385                 390                 395                 400
Val Val Arg Ser Ser Leu Lys Ala Met Val Pro Glu Phe Leu Asp Ile
                405                 410                 415
Arg Arg Ile Phe Glu Glu Glu Glu Phe Phe Phe Leu Ser Ala Arg Lys
            420                 425                 430
```

343

```
Arg Leu Ile Asp Leu Ala Thr Thr Leu Val Glu Arg Lys Ile Leu Thr
        435             440             445
Glu Gln Leu Glu Arg Asn Asn Leu Arg Lys Ala Phe Ser Tyr Leu Tyr
    450             455             460
Gln Asp Ser Ile Phe Lys Lys Ile Ile Asp Asn Phe Glu Lys Leu Ala
465             470             475             480
Trp Lys Phe Met Ile Leu Ser Lys Ser Ile Cys Arg Phe Thr Ile Ile
            485             490             495
Phe Glu Asn His Glu His Gly Val Ala Lys Ser Leu Leu His Lys Asn
        500             505             510
Ala Val Leu Leu Glu Lys Val Ile Tyr Arg Ser Leu Gln Lys Ser Tyr
    515             520             525
Arg Asp Ile Gly Met Ser Ser Ala Lys Met Lys Ile Leu His Gly Asn
    530             535             540
Pro Phe Phe Ser Leu Glu Asp Asn Lys Lys Thr Ile Met Lys Glu His
545             550             555             560
Ala Glu Met Leu Glu Ser Leu Ser Ser Tyr Arg Lys Val Phe Leu Ala
            565             570             575
Leu Ser Asp Glu Asn Val Val Asp Thr Pro Ser Asp Pro Lys Lys Trp
        580             585             590
Asp Leu Ser Gly Ile Pro Cys Arg Asp Ala Leu Ser Glu Ile Ser Arg
        595             600             605
Asp Glu Gln Trp Gln Lys Lys Ala His Leu Lys His Gln Glu Ser Leu
    610             615             620
Tyr Thr Gln Ala Arg Asp Arg Leu Thr Asp Gln Ser Ser Lys Glu Asn
625             630             635             640
Gln Lys Glu Leu Glu Lys Ala Glu Gln Glu Tyr Ile Ser Ser Trp Glu
            645             650             655
Arg Val Lys Lys Phe Glu Ile Glu Arg Val Gln Glu Arg Ile Arg Ala
            660             665             670
Ile Gln Lys Leu Tyr Pro Asn Ile Leu Glu Arg Glu Glu Glu Thr Thr
        675             680             685
Gly Gln Glu Thr Val Thr Pro Thr Val Gln Gly Thr Thr Ala Ser Ser
    690             695             700
Asp Leu Thr Asp Ile Leu Gly Arg Ile Glu Val Ser Ser Arg Glu Asp
705             710             715             720
Asn Gln Asn Gln Glu Ser Cys Val Lys Val Leu Arg Ser His Glu Val
            725             730             735
Glu Met Ser Trp Glu Val Lys Gln Glu Tyr Gly Pro Lys Lys Lys Glu
            740             745             750
Phe Gln Asp Gln Met Gly Ser Leu Glu Arg Phe Phe Thr Glu His Ile
        755             760             765
Glu Glu Leu Glu Val Leu Gln Lys Asp Tyr Ser Lys His Leu Ser Tyr
        770             775             780
Phe Lys Lys Val Asn Asn Lys Lys Glu Val Gln Tyr Ala Lys Phe Arg
785             790             795             800
Leu Lys Val Leu Glu Ser Asp Leu Glu Gly Ile Leu Ala Gln Thr Glu
            805             810             815
Ser Ala Glu Ser Leu Leu Thr Gln Glu Glu Leu Pro Ile Leu Ala Thr
        820             825             830
Arg Gly Ala Leu Glu Lys Ala Val Phe Lys Gly Ser Leu Cys Cys Ala
        835             840             845
Leu Ala Ser Lys Ala Lys Pro Tyr Phe Glu Glu Asp Pro Arg Phe Gln
        850             855             860
Asp Ser Asp Thr Gln Leu Arg Ala Leu Thr Leu Arg Leu Gln Glu Ala
865             870             875             880
Lys Ala Ser Leu Glu Glu Glu Ile Lys Arg Phe Ser Asn Leu Glu Asn
            885             890             895
Asp Ile Ala Glu Glu Arg Arg Leu Leu Lys Glu Ser Lys Gln Thr Phe
        900             905             910
```

344

```
Glu Arg Ala Gly Leu Gly Val Leu Arg Glu Ile Ala Val Glu Ser Thr
        915                     920                 925
Tyr Asp Leu Arg Ser Leu Thr Asn Thr Trp Glu Gly Thr Pro Glu Ser
        930                     935                 940
Glu Lys Val Tyr Phe Ser Met Tyr Leu Asn Tyr Tyr Asn Glu Glu Lys
945                     950                 955                 960
Arg Arg Ala Lys Thr Arg Leu Val Glu Met Thr Gln Arg Tyr Arg Asp
                965                 970                 975
Phe Lys Met Ala Leu Glu Ala Met Gln Phe Asn Glu Glu Ala Leu Leu
            980                 985                 990
Gln Glu Glu Leu Ser Ile Gln Ala Pro Ser Glu
        995                     1000
```

        <210> 9
        <211> 302
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 9
```
Cys Lys Tyr Ser Tyr Leu Leu Asn Tyr Pro Pro Pro Pro Arg Arg Ser
  1           5               10                  15
Leu Gly Val Ser Cys Ser Lys Leu Arg Ser Leu Ser Ile Thr Leu Leu
            20                  25                  30
Val Leu Gly Val Leu Leu Leu Thr Leu Gly Ile Pro Gly Leu Thr Ala
            35                  40                  45
Gly Ile Ser Phe Gly Ala Gly Leu Gly Phe Ser Ala Leu Gly Gly Val
        50                  55                  60
Leu Val Ile Ser Gly Leu Leu Phe Leu Leu Val Arg Arg Glu Val Pro
65                  70                  75                  80
Thr Val Arg Ser Glu Glu Ile Pro Arg Gly Val Ser Val Thr Pro Ser
                85                  90                  95
Glu Glu Pro Ala Leu Glu Lys Ala Gln Lys Glu Pro Glu Thr Lys Lys
            100                 105                 110
Ile Leu Asp Arg Leu Pro Lys Glu Leu Asp Gln Leu Asp Thr Tyr Ile
            115                 120                 125
Gln Glu Val Phe Ala Cys Leu Glu Arg Leu Lys Asp Pro Lys Tyr Glu
        130                 135                 140
Asp Arg Gly Leu Leu Thr Glu Ala Lys Glu Lys Leu Arg Val Phe Asp
145                 150                 155                 160
Val Val Glu Lys Asp Met Met Ser Glu Phe Leu Asp Ile Gln Arg Val
                165                 170                 175
Leu Asn Glu Glu Ala Tyr Tyr Val Glu His Cys Gln Asp Pro Leu Glu
            180                 185                 190
Asn Ile Ala Tyr Glu Ile Phe Ser Ser Gln Glu Leu Arg Asp Tyr Tyr
            195                 200                 205
Cys Ala Gly Val Cys Gly Tyr Leu Pro Ser Gly Asp Ala Arg Ala Asp
        210                 215                 220
Arg Leu Lys Arg Ser Val Lys Glu Val Met Asp Arg Phe Met Arg Val
225                 230                 235                 240
Thr Trp Lys Ser Trp Glu Ala Ser Val Met Leu Asp His Ser Tyr Gly
                245                 250                 255
Val Ala Arg Glu Leu Phe Lys Lys Ala Val Gly Val Leu Glu Glu Ser
            260                 265                 270
Val Tyr Lys Ile Leu Phe Lys Ser Tyr Arg Asp Ala Phe Tyr Glu Cys
            275                 280                 285
Glu Lys Ala Lys Ile Gln Arg Asp Gly Arg Phe Lys Trp Leu
        290                 295                 300
```

<210> 10
<211> 477
<212> PRT
<213> Chlamydia pneumoniae

<400> 10

```
Asp Thr Ser Ala His Ala Glu Gln Arg Phe Arg Asp Ile Asn Gly Cys
 1               5                  10                  15
Trp Glu Asp Leu Lys Gln Thr Ile Phe Trp Val Gly Glu His Asp Cys
                20                  25                  30
Thr Asp Ile Glu Thr Val Arg Lys Ser Cys Met Trp Leu Asp Arg Tyr
            35                  40                  45
Ala Asp Lys Phe Ile Leu Arg Glu Lys Glu Glu Lys Met Glu Arg His
        50                  55                  60
Glu Leu Phe His Ala Thr Met Val Arg Lys Ala Ser Gly His Ala Tyr
65                  70                  75                  80
Ala Lys Ala Lys Ala Ala Phe Glu Lys Glu Arg Ser Asn Glu Asn Gln
                85                  90                  95
Arg Lys Val Lys Asp Val Glu Lys Trp Leu Ser Lys Gly Leu Ala Glu
                100                 105                 110
Phe Arg Asn Gln Glu Ser Arg Arg Ala Arg Glu Arg Leu Arg Glu Leu
            115                 120                 125
Gln Thr Leu Tyr Pro Glu Val Ser Val Glu Glu Arg Val Leu Glu Arg
        130                 135                 140
Gln Arg Thr Lys Lys Val Asn Leu Glu Asn Leu Tyr Ala Asp Ile Glu
145                 150                 155                 160
Lys Lys Tyr His His Cys Val Arg Glu Gln Glu His Tyr Trp Lys Glu
                165                 170                 175
Val Glu Asn Lys Glu Ala Glu Tyr Arg Glu Asn Gly Glu Lys Val Leu
                180                 185                 190
Ser Ala Glu Glu Val Ser Glu Cys Leu Gln Arg Leu Glu Asp Cys Leu
            195                 200                 205
Glu Thr Trp Ser Lys Lys Leu Thr Lys Ala Glu Glu Ser Val Phe Glu
        210                 215                 220
Met Lys Phe Asp Ala Thr Glu Lys Leu Gly Asn Lys Val Leu Ser Asp
225                 230                 235                 240
Val Thr Asn Arg Leu Glu Ile Leu Cys Glu Asp Ala Glu Glu Met Ile
                245                 250                 255
Phe Arg Ile Glu Glu Ile Glu Met Thr Leu Arg Met Val Glu Leu Pro
                260                 265                 270
Leu Leu Phe Met Lys Asn Thr Phe Glu Lys Ala Ser Leu Gln Tyr Asn
            275                 280                 285
Ser Cys Lys Glu Met Leu Ala Lys Val Glu Pro Gln Cys Lys Glu Ser
        290                 295                 300
Pro Thr Tyr Arg Ser Ser Gln Glu Arg Leu Glu Arg Leu Asn Gln Asp
305                 310                 315                 320
Leu Gln Thr Ala Tyr Thr Asn Cys Gln Glu Arg Leu Gln Gly Phe Ser
                325                 330                 335
Asp Leu Glu Ser Lys Val Arg Thr Cys Arg Asp His Leu Arg Glu Gln
            340                 345                 350
Met Lys His Phe Glu Val Gln Gly Leu Asn Phe Ile Asn Glu Glu Leu
            355                 360                 365
Leu Trp Val Gly Ala Glu Leu Phe Thr Gln Ala Arg Leu Asp Leu Val
        370                 375                 380
Ala Thr Val Pro Tyr Met Glu Phe Tyr Leu Gln Tyr His Asn Ile Lys
385                 390                 395                 400
Arg Glu Lys Val Arg Ser Gln Trp Met Ala Lys Thr Glu Arg Tyr Arg
                405                 410                 415
Glu Ile Arg Gln Ala Phe Gln Gly Val Met Lys Glu Asp Leu Leu Ala
                420                 425                 430
```

346

Glu Asp Thr Ile Leu Lys Glu Glu Asp Tyr Trp Leu Leu Arg Asp Asp
        435   440   445
Trp Leu Leu Arg Asp Glu Arg Lys Asn Arg Gln Arg Arg Leu Ile Cys
    450   455   460
Asn Lys Ile Ala Ala Ala Gln Gln Arg Val Lys Gly Phe
465   470   475

        <210> 11
        <211> 334
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 11
Cys Lys Tyr Phe Tyr Leu Arg Ser Tyr Pro Pro Pro Gln His Ser
  1   5   10   15
Val Gly Ser Ile Ser Ser Pro Ser Lys Leu Arg Val Leu Ala Ile Thr
            20   25   30
Phe Leu Val Phe Gly Met Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu
        35   40   45
Thr Leu Gly Ile Pro Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly
    50   55   60
Ile Gly Leu Ser Ala Leu Gly Gly Val Leu Met Ile Ser Gly Leu Leu
65   70   75   80
Cys Leu Leu Val Lys Arg Glu Ile Pro Thr Val Arg Pro Glu Glu Ile
            85   90   95
Pro Glu Gly Val Ser Leu Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala
            100   105   110
Ala Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp
            115   120   125
Thr Asp Ile Gln Glu Val Phe Ala Cys Leu Arg Lys Leu Lys Asp Ser
    130   135   140
Lys Tyr Glu Ser Arg Ser Phe Leu Asn Asp Ala Lys Lys Glu Leu Arg
145   150   155   160
Val Phe Asp Phe Val Val Glu Asp Thr Leu Ser Glu Ile Phe Glu Leu
            165   170   175
Arg Gln Ile Val Ala Gln Glu Gly Trp Asp Leu Asn Phe Leu Ile Asn
            180   185   190
Gly Gly Arg Ser Leu Met Met Thr Ala Glu Ser Glu Ser Leu Asp Leu
            195   200   205
Phe His Val Ser Lys Arg Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg
    210   215   220
Gly Glu Gly Leu Lys Lys Ser Ala Lys Glu Ile Val Ala Arg Leu Met
225   230   235   240
Ser Leu His Cys Glu Ile His Lys Val Ala Val Ala Phe Asp Arg Asn
            245   250   255
Ser Tyr Ala Met Ala Glu Lys Ala Phe Ala Lys Ala Leu Gly Ala Leu
            260   265   270
Glu Glu Ser Val Tyr Arg Ser Leu Thr Gln Ser Tyr Arg Asp Lys Phe
            275   280   285
Leu Glu Ser Glu Arg Ala Lys Ile Pro Trp Asn Gly His Ile Thr Trp
    290   295   300
Leu Arg Asp Asp Ala Lys Ser Gly Cys Ala Glu Lys Lys Leu Gly Met
305   310   315   320
Pro Arg Asn Val Gly Arg Asn Leu Gly Lys Gln Ser Phe Gly
            325   330

        <210> 12
        <211> 493
        <212> PRT
        <213> Chlamydia pneumoniae

347

<400> 12

```
Lys Glu Ala Arg Asp Ala Glu Glu Arg Trp Lys Lys Phe Arg Lys Ala
1               5                   10                  15
Val Glu Trp Val Glu Glu Asp Gly Gly Phe Asp Ile Asn Asn Leu Leu
            20                  25                  30
Gly Asp Trp Gly Thr Val Leu Asp Pro Tyr Arg Gln Glu Arg Met Asp
            35                  40                  45
Glu Ile Thr Phe His Glu Leu Tyr Glu Lys Thr Thr Phe Leu Lys Arg
        50                  55                  60
Leu His Arg Lys Cys Ala Leu Ala Lys Thr Thr Phe Glu Lys Lys Arg
65                  70                  75                  80
Ser Lys Lys Asn Leu Gln Ala Val Glu Glu Ala Asn Ala Arg Arg Leu
                85                  90                  95
Lys Tyr Val Arg Asp Trp Tyr Asp Gln Glu Phe Gln Lys Ala Gly Glu
            100                 105                 110
Arg Leu Glu Lys Leu His Ala Leu Tyr Pro Glu Val Ser Val Ser Ile
        115                 120                 125
Arg Glu Asn Lys Ile Gln Glu Thr Arg Ser Asn Leu Glu Lys Ala Tyr
    130                 135                 140
Glu Ala Ile Glu Glu Asn Tyr Arg Cys Cys Val Arg Glu Gln Glu Asp
145                 150                 155                 160
Tyr Trp Lys Glu Glu Glu Lys Arg Glu Ala Glu Phe Arg Glu Arg Gly
            165                 170                 175
Asn Lys Ile Leu Ser Pro Glu Glu Leu Glu Ser Ser Leu Glu Gln Phe
        180                 185                 190
Asp His Gly Leu Lys Asn Phe Ser Glu Lys Leu Met Glu Leu Glu Gly
        195                 200                 205
His Ile Leu Lys Leu Gln Lys Glu Ala Thr Ala Glu Val Glu Asn Lys
    210                 215                 220
Ile Leu Ser Asp Ala Glu Ser Arg Leu Glu Ile Val Phe Glu Asp Val
225                 230                 235                 240
Lys Glu Met Pro Cys Arg Ile Glu Glu Ile Glu Lys Thr Leu Arg Met
            245                 250                 255
Ala Glu Leu Pro Leu Leu Pro Thr Lys Lys Ala Phe Glu Lys Ala Cys
            260                 265                 270
Ser Gln Tyr Asn Ser Cys Ala Glu Met Leu Glu Lys Val Lys Pro Tyr
            275                 280                 285
Cys Lys Glu Ser Leu Ala Tyr Val Thr Ser Lys Glu Arg Leu Val Ser
    290                 295                 300
Leu Asp Glu Asp Leu Arg Arg Ala Tyr Thr Glu Cys Gln Lys Arg Phe
305                 310                 315                 320
Gln Gly Asp Ser Gly Leu Glu Ser Glu Val Arg Ala Cys Arg Glu Gln
            325                 330                 335
Leu Arg Glu Arg Ile Gln Glu Phe Glu Thr Gln Gly Leu Asp Leu Val
        340                 345                 350
Glu Lys Glu Leu Leu Cys Val Ser Ser Arg Leu Arg Asn Thr Glu Cys
    355                 360                 365
Asp Cys Val Ser Gly Val Lys Lys Glu Ala Pro Pro Gly Lys Lys Phe
370                 375                 380
Tyr Ala Gln Tyr Tyr Asp Glu Ile Tyr Arg Val Arg Val Gln Ser Arg
385                 390                 395                 400
Trp Met Thr Met Ser Glu Arg Leu Arg Glu Gly Val Gln Ala Cys Asn
            405                 410                 415
Lys Met Leu Lys Ala Gly Leu Ser Glu Glu Asp Lys Val Leu Lys Glu
            420                 425                 430
Glu Glu Tyr Trp Leu Tyr Arg Glu Glu Arg Lys Asn Lys Glu Lys Arg
            435                 440                 445
Leu Val Gly Thr Lys Ile Val Ala Thr Gln Gln Arg Ile Gln Glu Phe
    450                 455                 460
Gln Pro Ser Asp Ile Val Glu Ser Ser Asn Glu Lys Val Ser Leu Met
465                 470                 475                 480
```

348

```
Asp Lys Ala Arg Phe Leu Phe Asn Arg Glu Asp His Ser
                485                 490


        <210> 13
        <211> 246
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 13
Phe Trp Tyr Ser Ile Met Thr Ala Ala Pro Ala Ile Leu His Val Ser
  1           5               10              15
Pro Thr Pro Pro Glu Glu Thr Lys Phe Val Ile Pro Lys Asp Ser Lys
            20              25              30
Ser Arg Ala Leu Gly Ile Thr Leu Leu Val Val Gly Ile Leu Leu Val
            35              40              45
Val Cys Gly Ala Ile Val Leu Ser Gly Val Ile Ser Gly Leu Ser Ala
    50              55              60
Leu Ile Val Cys Gly Leu Gly Ile Ser Thr Ile Ser Leu Gly Val Val
65              70              75              80
Leu Phe Val Leu Gly Leu Ile Leu Leu Leu Arg Lys Arg Glu Leu Thr
            85              90              95
Leu Glu Gln Ile Glu Ala Lys Gln Ile Ala Glu Thr Phe Ala Asp Glu
            100             105             110
Leu Lys Glu Leu Glu Met Tyr Ile Gln Ser Thr Glu Lys Ser Leu Glu
            115             120             125
Lys Ile Glu Gly Ser Arg Tyr Ser Asp Gln Gly Phe Leu Asn Arg Ala
    130             135             140
Thr Gln Lys Ile Leu Asp Leu Glu Ser Ser Leu Ser Ser Ile Thr Ser
145             150             155             160
Glu Phe Arg Asp Leu Arg Gln Leu Phe Asp Glu Glu Lys Ile Glu Leu
            165             170             175
Leu Ser Gly Glu Arg Leu Leu Glu Phe Ile Ala Ala Asn Leu Phe Lys
            180             185             190
Gln Gly Arg Asp Val Tyr Leu Asn Leu Gly Asn Leu Ala Asp Ile Arg
            195             200             205
Ala Tyr Met Gly Pro Asn Asn Tyr Lys Val Ala Met Val Ile Glu Lys
    210             215             220
Ala Lys Ala Val Val His Glu Phe Ile Val Leu Thr Thr Met Ala Arg
225             230             235             240
Glu Leu Glu Phe Phe Phe
            245


        <210> 14
        <211> 539
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 14
Gly Ile Arg Val Phe Phe Leu Lys Asn Lys Tyr Gly Leu Leu Lys Gly
  1           5               10              15
Met Tyr Gln Glu Asn Leu Arg Leu Leu Glu Arg Leu Leu Tyr Asn Ser
            20              25              30
Val Gln Lys Ser Tyr Ala Asp Arg Leu Phe Ser Tyr Glu Lys Thr Lys
            35              40              45
Met Val His Asp Thr Pro Leu Ile Pro Trp Glu Glu Asp Lys Glu Lys
    50              55              60
Cys Ala Glu Ala Glu Lys Ala Phe Leu Glu Gln Gln Lys Ile Leu Leu
65              70              75              80
Asp Tyr Gly Lys Ser Ile Phe Trp Leu Asn Glu Asn Asp Glu Ile Asn
            85              90              95
```

349

```
Leu Asn Asp Pro Trp Ser Trp Gly Leu Asn Thr Val Arg Thr Arg Lys
            100                 105                 110
Val Phe Gln Glu Val Asp Asp Ser Glu Arg Trp Asn His Lys Val Leu
            115                 120                 125
Ile Gln Lys Leu Glu Asp Asp Tyr Glu Lys Leu Leu Glu Glu Ser Ser
    130                 135                 140
Lys Glu Ser Thr Glu Ala Asn Lys Lys Leu Leu Ser Asp Leu Val Asp
145                 150                 155                 160
Arg Leu Glu Asp Ala Lys Thr Lys Phe Phe Leu Lys Lys Gln Glu Glu
            165                 170                 175
Val Glu Thr Arg Val Lys Asp Leu Arg Ala Arg Tyr Gly Gly Thr Val
            180                 185                 190
Asp Pro Lys Gln Asp Thr Glu Ala Lys Lys Lys Val Glu Leu Glu Ala
            195                 200                 205
Ser Leu Glu Thr Phe Leu Asp Ser Ile Glu Ser Glu Leu Val Gln Cys
    210                 215                 220
Leu Glu Asp Gln Asp Ile Tyr Trp Lys Glu Gln Asp Val Lys Asp Leu
225                 230                 235                 240
Ala Arg Thr Gln Glu Leu Glu Glu Gln Asp Ile Glu Ala Lys Arg Glu
            245                 250                 255
Glu Ala Ala Glu Asp Leu Arg Ser Leu Asn Glu Arg Leu Lys Lys Ser
            260                 265                 270
Lys Thr Met Leu Asp Arg Ala Lys Trp His Ile Glu Asn Ala Glu Asp
    275                 280                 285
Ser Ile Thr Trp Trp Thr Ser Gln Ile Glu Met Lys Asp Met Lys Ala
    290                 295                 300
Arg Leu Lys Ile Leu Lys Glu Asp Ile Thr Ser Val Leu Pro Glu Ile
305                 310                 315                 320
Asp Glu Ile Glu Thr Cys Leu Ser Leu Glu Glu Leu Pro Leu Leu Thr
            325                 330                 335
Thr Arg Glu Leu Leu Thr Lys Ser Tyr Leu Lys Phe Lys Ile Cys Ser
            340                 345                 350
Glu Thr Leu Leu Lys Met Thr Ser Val Phe Glu Asn Asn Ile Tyr Val
            355                 360                 365
Gln Glu Tyr Glu Val Gln Leu Gln Asn Leu Gly Phe Lys Leu Gln Gly
    370                 375                 380
Ile Ser Gln Arg Phe Gly Lys Lys Gln Asp Asp Phe Ala Asn Leu Glu
385                 390                 395                 400
Glu Gln Val Ala Leu Gln Lys Lys Arg Leu Arg Glu Leu Thr Gln Asn
            405                 410                 415
Phe Glu Ile Gln Gly Phe Asn Phe Met Lys Glu Asp Phe Lys Ala Ala
            420                 425                 430
Ala Lys Asp Leu Tyr Ile Arg Ser Thr Ala Glu Gln Lys Met Asn Phe
            435                 440                 445
Asp Val Pro Cys Met Glu Leu Phe Arg Arg Tyr His Glu Glu Val Asn
    450                 455                 460
Lys Pro Leu Leu Glu Leu Met Tyr Asn Cys Ala Asp Ser Tyr Arg Asp
465                 470                 475                 480
Ala Lys Lys Lys Leu Cys Ser Leu Arg Leu Asp Glu Lys Glu Leu Leu
            485                 490                 495
Gln Lys Glu Ile Lys Lys Glu Glu Phe Tyr Gln Lys Lys Gln Gln Arg
            500                 505                 510
His Ala Asp Arg Ser Arg His Thr Thr Tyr Gln Lys Leu Arg Ile Ala
            515                 520                 525
Glu Glu Leu Ala Leu Glu Leu Lys Lys Lys Ile
530                 535
```

        <210> 15
        <211> 866
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 15
```
Leu Arg Asp Arg Leu Ala Phe Phe Ile Tyr Leu Leu Tyr Trp Lys Glu
1               5                   10                  15
Ser Pro Leu Arg Glu Lys Lys Val Val Met Lys Ile Pro Leu Arg Phe
            20                  25                  30
Leu Leu Ile Ser Leu Val Pro Thr Leu Ser Met Ser Asn Leu Leu Gly
        35                  40                  45
Ala Ala Thr Thr Glu Glu Leu Ser Ala Ser Asn Ser Phe Asp Gly Thr
    50                  55                  60
Thr Ser Thr Thr Ser Phe Ser Ser Lys Thr Ser Ser Ala Thr Asp Gly
65                  70                  75                  80
Thr Asn Tyr Val Phe Lys Asp Ser Val Val Ile Glu Asn Val Pro Lys
                85                  90                  95
Thr Gly Glu Thr Gln Ser Thr Ser Cys Phe Lys Asn Asp Ala Ala Ala
            100                 105                 110
Gly Asp Leu Asn Phe Leu Gly Gly Gly Phe Ser Phe Thr Phe Ser Asn
        115                 120                 125
Ile Asp Ala Thr Thr Ala Ser Gly Ala Ala Ile Gly Ser Glu Ala Ala
    130                 135                 140
Asn Lys Thr Val Thr Leu Ser Gly Phe Ser Ala Leu Ser Phe Leu Lys
145                 150                 155                 160
Ser Pro Ala Ser Thr Val Thr Asn Gly Leu Gly Ala Ile Asn Val Lys
                165                 170                 175
Gly Asn Leu Ser Leu Leu Asp Asn Asp Lys Val Leu Ile Gln Asp Asn
                180                 185                 190
Phe Ser Thr Gly Asp Gly Gly Ala Ile Asn Cys Ala Gly Ser Leu Lys
            195                 200                 205
Ile Ala Asn Asn Lys Ser Leu Ser Phe Ile Gly Asn Ser Ser Ser Thr
    210                 215                 220
Arg Gly Gly Ala Ile His Thr Lys Asn Leu Thr Leu Ser Ser Gly Gly
225                 230                 235                 240
Glu Thr Leu Phe Gln Gly Asn Thr Ala Pro Thr Ala Ala Gly Lys Gly
                245                 250                 255
Gly Ala Ile Ala Ile Ala Asp Ser Gly Thr Leu Ser Ile Ser Gly Asp
                260                 265                 270
Ser Gly Asp Ile Ile Phe Glu Gly Asn Thr Ile Gly Ala Thr Gly Thr
            275                 280                 285
Val Ser His Ser Ala Ile Asp Leu Gly Thr Ser Ala Lys Ile Thr Ala
    290                 295                 300
Leu Arg Ala Ala Gln Gly His Thr Ile Tyr Phe Tyr Asp Pro Ile Thr
305                 310                 315                 320
Val Thr Gly Ser Thr Ser Val Ala Asp Ala Leu Asn Ile Asn Ser Pro
                325                 330                 335
Asp Thr Gly Asp Asn Lys Glu Tyr Thr Gly Thr Ile Val Phe Ser Gly
            340                 345                 350
Glu Lys Leu Thr Glu Ala Glu Ala Lys Asp Glu Lys Asn Arg Thr Ser
            355                 360                 365
Lys Leu Leu Gln Asn Val Ala Phe Lys Asn Gly Thr Val Val Leu Lys
    370                 375                 380
Gly Asp Val Val Leu Ser Ala Asn Gly Phe Ser Gln Asp Ala Asn Ser
385                 390                 395                 400
Lys Leu Ile Met Asp Leu Gly Thr Ser Leu Val Ala Asn Thr Glu Ser
                405                 410                 415
Ile Glu Leu Thr Asn Leu Glu Ile Asn Ile Asp Ser Leu Arg Asn Gly
            420                 425                 430
Lys Lys Ile Lys Leu Ser Ala Ala Thr Ala Gln Lys Asp Ile Arg Ile
            435                 440                 445
Asp Arg Pro Val Val Leu Ala Ile Ser Asp Glu Ser Phe Tyr Gln Asn
    450                 455                 460
Gly Phe Leu Asn Glu Asp His Ser Tyr Asp Gly Ile Leu Glu Leu Asp
465                 470                 475                 480
```

351

```
Ala Gly Lys Asp Ile Val Ile Ser Ala Asp Ser Arg Ser Ile Asp Ala
                485             490             495
Val Gln Ser Pro Tyr Gly Tyr Gln Gly Lys Trp Thr Ile Asn Trp Ser
            500             505             510
Thr Asp Asp Lys Lys Ala Thr Val Ser Trp Ala Lys Gln Ser Phe Asn
        515             520             525
Pro Thr Ala Glu Gln Glu Ala Pro Leu Val Pro Asn Leu Leu Trp Gly
    530             535             540
Ser Phe Ile Asp Val Arg Ser Phe Gln Asn Phe Ile Glu Leu Gly Thr
545             550             555             560
Glu Gly Ala Pro Tyr Glu Lys Arg Phe Trp Val Ala Gly Ile Ser Asn
            565             570                 575
Val Leu His Arg Ser Gly Arg Glu Asn Gln Arg Lys Phe Arg His Val
            580             585             590
Ser Gly Gly Ala Val Val Gly Ala Ser Thr Arg Met Pro Gly Gly Asp
        595             600             605
Thr Leu Ser Leu Gly Phe Ala Gln Leu Phe Ala Arg Asp Lys Asp Tyr
    610             615             620
Phe Met Asn Thr Asn Phe Ala Lys Thr Tyr Ala Gly Ser Leu Arg Leu
625             630             635             640
Gln His Asp Ala Ser Leu Tyr Ser Val Val Ser Ile Leu Leu Gly Glu
            645             650             655
Gly Gly Leu Arg Glu Ile Leu Leu Pro Tyr Val Ser Lys Thr Leu Pro
            660             665             670
Cys Ser Phe Tyr Gly Gln Leu Ser Tyr Gly His Thr Asp His Arg Met
            675             680             685
Lys Thr Glu Ser Leu Pro Pro Pro Pro Pro Thr Leu Ser Thr Asp His
    690             695             700
Thr Ser Trp Gly Gly Tyr Val Trp Ala Gly Glu Leu Gly Thr Arg Val
705             710             715             720
Ala Val Glu Asn Thr Ser Gly Arg Gly Phe Phe Gln Glu Tyr Thr Pro
            725             730             735
Phe Val Lys Val Gln Ala Val Tyr Ala Arg Gln Asp Ser Phe Val Glu
            740             745             750
Leu Gly Ala Ile Ser Arg Asp Phe Ser Asp Ser His Leu Tyr Asn Leu
            755             760             765
Ala Ile Pro Leu Gly Ile Lys Leu Glu Lys Arg Phe Ala Glu Gln Tyr
            770             775             780
Tyr His Val Val Ala Met Tyr Ser Pro Asp Val Cys Arg Ser Asn Pro
785             790             795             800
Lys Cys Thr Thr Thr Leu Leu Ser Asn Gln Gly Ser Trp Lys Thr Lys
            805             810             815
Gly Ser Asn Leu Ala Arg Gln Ala Gly Ile Val Gln Ala Ser Gly Phe
            820             825             830
Arg Ser Leu Gly Ala Ala Ala Glu Leu Phe Gly Asn Phe Gly Phe Glu
            835             840             845
Trp Arg Gly Ser Ser Arg Ser Tyr Asn Val Asp Ala Gly Ser Lys Ile
850             855             860
Lys Phe
865
```

```
        <400> 16
Ile Gln Asn Gln Ser Ile Tyr Phe Thr Met Lys Ser Ser Phe Pro Lys
1               5               10              15
Phe Val Phe Ser Thr Phe Ala Ile Phe Pro Leu Ser Met Ile Ala Thr
            20              25              30
```

352

```
Glu Thr Val Leu Asp Ser Ser Ala Ser Phe Asp Gly Asn Lys Asn Gly
        35                  40                  45
Asn Phe Ser Val Arg Glu Ser Gln Glu Asp Ala Gly Thr Thr Tyr Leu
    50                  55                  60
Phe Lys Gly Asn Val Thr Leu Glu Asn Ile Pro Gly Thr Gly Thr Ala
65                  70                  75                      80
Ile Thr Lys Ser Cys Phe Asn Asn Thr Lys Gly Asp Leu Thr Phe Thr
                85                  90                  95
Gly Asn Gly Asn Ser Leu Leu Phe Gln Thr Val Asp Ala Gly Thr Val
                100                 105                 110
Ala Gly Ala Ala Val Asn Ser Ser Val Val Asp Lys Ser Thr Thr Phe
        115                 120                 125
Ile Gly Phe Ser Ser Leu Ser Phe Ile Ala Ser Pro Gly Ser Ser Ile
    130                 135                 140
Thr Thr Gly Lys Gly Ala Val Ser Cys Ser Thr Gly Ser Leu Ser Leu
145             150                 155                     160
Thr Lys Met Ser Val Cys Ser Ser Ala Lys Thr Phe Gln Arg Ile Met
                165                 170                 175
Ala Val Leu Ser Pro Gln Lys Leu Phe His
                180                 185
```

        <210> 17
        <211> 780
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 17
```
Leu Glu Phe Asp Lys Asn Val Ser Leu Leu Phe Ser Lys Asn Phe Ser
  1             5                   10                  15
Thr Asp Asn Gly Gly Ala Ile Thr Ala Lys Thr Leu Ser Leu Thr Gly
            20                  25                  30
Thr Thr Met Ser Ala Leu Phe Ser Glu Asn Thr Ser Ser Lys Lys Gly
        35                  40                  45
Gly Ala Ile Gln Thr Ser Asp Ala Leu Thr Ile Thr Gly Asn Gln Gly
    50                  55                  60
Glu Val Ser Phe Ser Asp Asn Thr Ser Ser Asp Ser Gly Ala Ala Ile
65                  70                  75                      80
Phe Thr Glu Ala Ser Val Thr Ile Ser Asn Asn Ala Lys Val Ser Phe
                85                  90                  95
Ile Asp Asn Lys Val Thr Gly Ala Ser Ser Ser Thr Thr Gly Asp Met
                100                 105                 110
Ser Gly Gly Ala Ile Cys Ala Tyr Lys Thr Ser Thr Asp Thr Lys Val
        115                 120                 125
Thr Leu Thr Gly Asn Gln Met Leu Leu Phe Ser Asn Asn Thr Ser Thr
    130                 135                 140
Thr Ala Gly Gly Ala Ile Tyr Val Lys Lys Leu Glu Leu Ala Ser Gly
145             150                 155                     160
Gly Leu Thr Leu Phe Ser Arg Asn Ser Val Asn Gly Gly Thr Ala Pro
                165                 170                 175
Lys Gly Gly Ala Ile Ala Ile Glu Asp Ser Gly Glu Leu Ser Leu Ser
                180                 185                 190
Ala Asp Ser Gly Asp Ile Val Phe Leu Gly Asn Thr Val Thr Ser Thr
        195                 200                 205
Thr Pro Gly Thr Asn Arg Ser Ser Ile Asp Leu Gly Thr Ser Ala Lys
    210                 215                 220
Met Thr Ala Leu Arg Ser Ala Ala Gly Arg Ala Ile Tyr Phe Tyr Asp
225             230                 235                     240
Pro Ile Thr Thr Gly Ser Ser Thr Thr Val Thr Asp Val Leu Lys Val
                245                 250                 255
Asn Glu Thr Pro Ala Asp Ser Ala Leu Gln Tyr Thr Gly Asn Ile Ile
                260                 265                 270
```

353

```
Phe Thr Gly Glu Lys Leu Ser Glu Thr Glu Ala Ala Asp Ser Lys Asn
        275                 280                 285
Leu Thr Ser Lys Leu Leu Gln Pro Val Thr Leu Ser Gly Gly Thr Leu
        290                 295                 300
Ser Leu Lys His Gly Val Thr Leu Gln Thr Gln Ala Phe Thr Gln Gln
305                 310                 315                 320
Ala Asp Ser Arg Leu Glu Met Asp Val Gly Thr Thr Leu Glu Pro Ala
                325                 330                 335
Asp Thr Ser Thr Ile Asn Asn Leu Val Ile Asn Ile Ser Ser Ile Asp
                340                 345                 350
Gly Ala Lys Lys Ala Lys Ile Glu Thr Lys Ala Thr Ser Lys Asn Leu
        355                 360                 365
Thr Leu Ser Gly Thr Ile Thr Leu Leu Asp Pro Thr Gly Thr Phe Tyr
        370                 375                 380
Glu Asn His Ser Leu Arg Asn Pro Gln Ser Tyr Asp Ile Leu Glu Leu
385                 390                 395                 400
Lys Ala Ser Gly Thr Val Thr Ser Thr Ala Val Thr Pro Asp Pro Ile
                405                 410                 415
Met Gly Glu Lys Phe His Tyr Gly Tyr Gln Gly Thr Trp Gly Pro Ile
                420                 425                 430
Val Trp Gly Thr Gly Ala Ser Thr Thr Ala Thr Phe Asn Trp Thr Lys
        435                 440                 445
Thr Gly Tyr Ile Pro Asn Pro Glu Arg Ile Gly Ser Leu Val Pro Asn
        450                 455                 460
Ser Leu Trp Asn Ala Phe Ile Asp Ile Ser Ser Leu His Tyr Leu Met
465                 470                 475                 480
Glu Thr Ala Asn Glu Gly Leu Gln Gly Asp Arg Ala Phe Trp Cys Ala
                485                 490                 495
Gly Leu Ser Asn Phe Phe His Lys Asp Ser Thr Lys Thr Arg Arg Gly
                500                 505                 510
Phe Arg His Leu Ser Gly Gly Tyr Val Ile Gly Gly Asn Leu His Thr
        515                 520                 525
Cys Ser Asp Lys Ile Leu Ser Ala Ala Phe Cys Gln Leu Phe Gly Arg
        530                 535                 540
Asp Arg Asp Tyr Phe Val Ala Lys Asn Gln Gly Thr Val Tyr Gly Gly
545                 550                 555                 560
Thr Leu Tyr Tyr Gln His Asn Glu Thr Tyr Ile Ser Leu Pro Cys Lys
                565                 570                 575
Leu Arg Pro Cys Ser Leu Ser Tyr Val Pro Thr Glu Ile Pro Val Leu
                580                 585                 590
Phe Ser Gly Asn Leu Ser Tyr Thr His Thr Asp Asn Asp Leu Lys Thr
        595                 600                 605
Lys Tyr Thr Thr Tyr Pro Thr Val Lys Gly Ser Trp Gly Asn Asp Ser
        610                 615                 620
Phe Ala Leu Glu Phe Gly Gly Arg Ala Pro Ile Cys Leu Asp Glu Ser
625                 630                 635                 640
Ala Leu Phe Glu Gln Tyr Met Pro Phe Met Lys Leu Gln Phe Val Tyr
                645                 650                 655
Ala His Gln Glu Gly Phe Lys Glu Gln Gly Thr Glu Ala Arg Glu Phe
                660                 665                 670
Gly Ser Ser Arg Leu Val Asn Leu Ala Leu Pro Ile Gly Ile Arg Phe
        675                 680                 685
Asp Lys Glu Ser Asp Cys Gln Asp Ala Thr Tyr Asn Leu Thr Leu Gly
        690                 695                 700
Tyr Thr Val Asp Leu Val Arg Ser Asn Pro Asp Cys Thr Thr Thr Leu
705                 710                 715                 720
Arg Ile Ser Gly Asp Ser Trp Lys Thr Phe Gly Thr Asn Leu Ala Arg
                725                 730                 735
Gln Ala Leu Val Leu Arg Ala Gly Asn His Phe Cys Phe Asn Ser Asn
        740                 745                 750
```

354

```
Phe Glu Ala Phe Ser Gln Phe Ser Phe Glu Leu Arg Gly Ser Ser Arg
        755                 760                 765
Asn Tyr Asn Val Asp Leu Gly Ala Lys Tyr Gln Phe
    770                 775                 780


        <210> 18
        <211> 602
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 18
Arg Ser Asp Phe Ala Leu Lys Arg Gly Cys His Met Arg Ser Ser Phe
1               5                   10                  15
Ser Leu Leu Leu Ile Ser Ser Ser Leu Ala Phe Pro Leu Leu Met Ser
            20                  25                  30
Val Ser Ala Asp Ala Ala Asp Leu Thr Leu Gly Ser Arg Asp Ser Tyr
        35                  40                  45
Asn Gly Asp Thr Ser Thr Thr Glu Phe Thr Pro Lys Ala Ala Thr Ser
    50                  55                  60
Asp Ala Ser Gly Thr Thr Tyr Ile Leu Asp Gly Asp Val Ser Ile Ser
65                  70                  75                  80
Gln Ala Gly Lys Gln Thr Ser Leu Thr Thr Ser Cys Phe Ser Asn Thr
                85                  90                  95
Ala Gly Asn Leu Thr Phe Leu Gly Asn Gly Phe Ser Leu His Phe Asp
            100                 105                 110
Asn Ile Ile Ser Ser Thr Val Ala Gly Val Val Val Ser Asn Thr Ala
        115                 120                 125
Ala Ser Gly Ile Thr Lys Phe Ser Gly Phe Ser Thr Leu Arg Met Leu
    130                 135                 140
Ala Ala Pro Arg Thr Thr Gly Lys Gly Ala Ile Lys Ile Thr Asp Gly
145                 150                 155                 160
Leu Val Phe Glu Ser Ile Gly Asn Leu Asp Leu Asn Glu Asn Ala Ser
                165                 170                 175
Ser Glu Asn Gly Gly Ala Ile Asn Thr Lys Thr Leu Ser Leu Thr Gly
            180                 185                 190
Ser Thr Arg Phe Val Ala Phe Leu Gly Asn Ser Ser Ser Gln Gln Gly
        195                 200                 205
Gly Ala Ile Tyr Ala Ser Gly Asp Ser Val Ile Ser Glu Asn Ala Gly
    210                 215                 220
Ile Leu Ser Phe Gly Asn Asn Ser Ala Thr Thr Ser Gly Gly Ala Ile
225                 230                 235                 240
Ser Ala Glu Gly Asn Leu Val Ile Ser Asn Asn Gln Asn Ile Phe Phe
                245                 250                 255
Asp Gly Cys Lys Ala Thr Thr Asn Gly Gly Ala Ile Asp Cys Asn Lys
            260                 265                 270
Ala Gly Ala Asn Pro Asp Pro Ile Leu Thr Leu Ser Gly Asn Glu Ser
        275                 280                 285
Leu His Phe Leu Asn Asn Thr Ala Gly Asn Ser Gly Gly Ala Ile Tyr
    290                 295                 300
Thr Lys Lys Leu Val Leu Ser Ser Gly Arg Gly Gly Val Leu Phe Ser
305                 310                 315                 320
Asn Asn Lys Ala Ala Asn Ala Thr Pro Lys Gly Gly Ala Ile Ala Ile
                325                 330                 335
Leu Asp Ser Gly Glu Ile Ser Ile Ser Ala Asp Leu Gly Asn Ile Ile
            340                 345                 350
Phe Glu Gly Asn Thr Thr Ser Thr Thr Gly Ser Pro Ala Ser Val Thr
        355                 360                 365
Arg Asn Ala Ile Asp Leu Ala Ser Asn Ala Lys Phe Leu Asn Leu Arg
    370                 375                 380
Ala Thr Arg Gly Asn Lys Val Ile Phe Tyr Asp Pro Ile Thr Ser Ser
385                 390                 395                 400
```

```
Gly Ala Thr Asp Lys Leu Ser Leu Asn Lys Ala Asp Ala Gly Ser Gly
              405             410             415
Asn Thr Tyr Glu Gly Tyr Ile Val Phe Ser Gly Glu Lys Leu Ser Glu
              420             425             430
Glu Glu Leu Lys Lys Pro Asp Asn Leu Lys Ser Thr Phe Thr Gln Ala
              435             440             445
Val Glu Leu Ala Ala Gly Ala Leu Val Leu Lys Asp Gly Val Thr Val
              450             455             460
Val Ala Asn Thr Ile Thr Gln Val Glu Gly Ser Lys Val Val Met Asp
465             470             475             480
Gly Gly Thr Thr Phe Glu Ala Ser Ala Glu Gly Val Thr Leu Asn Gly
              485             490             495
Leu Ala Ile Asn Ile Asp Ser Leu Asp Gly Thr Asn Lys Ala Ile Ile
              500             505             510
Lys Ala Thr Ala Ala Ser Lys Asp Val Ala Leu Ser Gly Pro Ile Met
              515             520             525
Leu Val Asp Ala Gln Gly Asn Tyr Tyr Glu His His Asn Leu Ser Gln
              530             535             540
Gln Gln Val Phe Pro Leu Ile Glu Leu Ser Ala Gln Gly Thr Met Thr
545             550             555             560
Thr Thr Asp Ile Pro Asp Thr Pro Ile Leu Asn Thr Thr Asn His Tyr
              565             570             575
Gly Tyr Gln Gly Asn Trp Asn Asn Cys Leu Gly Arg Arg Cys Asn Cys
              580             585             590
Lys Asn Lys Lys Cys Tyr Leu Asn Leu Asp
              595             600


        <210> 19
        <211> 359
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 19
Ile Leu Arg Ile Thr Met Gly Ile Lys Gly Thr Gly Ile Ile Val Trp
  1           5              10             15
Val Asp Asp Ala Thr Ala Lys Thr Lys Asn Ala Thr Leu Thr Trp Thr
              20             25             30
Lys Thr Gly Tyr Lys Pro Asn Pro Glu Arg Gln Gly Pro Leu Val Pro
          35             40             45
Asn Ser Leu Trp Gly Ser Phe Val Asp Val Arg Ser Ile Gln Ser Leu
          50             55             60
Met Asp Arg Ser Thr Ser Ser Leu Ser Ser Ser Thr Asn Leu Trp Val
65             70             75             80
Ser Gly Ile Ala Asp Phe Leu His Glu Asp Gln Lys Gly Asn Gln Arg
              85             90             95
Ser Tyr Arg His Ser Ser Ala Gly Tyr Ala Leu Gly Gly Gly Phe Phe
              100            105            110
Thr Ala Ser Glu Asn Phe Phe Asn Phe Ala Phe Cys Gln Leu Phe Gly
          115            120            125
Tyr Asp Lys Asp His Leu Val Ala Lys Asn His Thr His Val Tyr Ala
          130            135            140
Gly Ala Met Ser Tyr Arg His Leu Gly Glu Ser Lys Thr Leu Ala Lys
145            150            155            160
Ile Leu Ser Gly Asn Ser Asp Ser Leu Pro Phe Val Phe Asn Ala Arg
              165            170            175
Phe Ala Tyr Gly His Thr Asp Asn Asn Met Thr Thr Lys Tyr Thr Gly
              180            185            190
Tyr Ser Pro Val Lys Gly Ser Trp Gly Asn Asp Ala Phe Gly Ile Glu
          195            200            205
Cys Gly Gly Ala Ile Pro Val Val Ala Ser Gly Arg Arg Ser Trp Val
210            215            220
```

356

Asp Thr His Thr Pro Phe Leu Asn Leu Glu Met Ile Tyr Ala His Gln
225   230   235   240
Asn Asp Phe Lys Glu Asn Gly Thr Glu Gly Arg Ser Phe Gln Ser Glu
            245   250   255
Asp Leu Phe Asn Leu Ala Val Pro Val Gly Ile Lys Phe Glu Lys Phe
            260   265   270
Ser Asp Lys Ser Thr Tyr Asp Leu Ser Ile Ala Tyr Val Pro Asp Val
            275   280   285
Ile Arg Asn Asp Pro Gly Cys Thr Thr Thr Leu Met Val Ser Gly Asp
            290   295   300
Ser Trp Ser Thr Cys Gly Thr Ser Leu Ser Arg Gln Ala Leu Leu Val
305   310   315   320
Arg Ala Gly Asn His His Ala Phe Ala Ser Asn Phe Glu Val Phe Ser
                325   330   335
Gln Phe Glu Val Glu Leu Arg Gly Ser Ser Arg Ser Tyr Ala Ile Asp
            340   345   350
Leu Gly Gly Arg Phe Gly Phe
            355

        <210> 20
        <211> 497
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 20
Glu Tyr Asn Met Lys Thr Ser Val Ser Met Leu Leu Ala Leu Leu Cys
  1   5   10   15
Ser Gly Ala Ser Ser Ile Val Leu His Ala Ala Thr Thr Pro Leu Asn
            20   25   30
Pro Glu Asp Gly Phe Ile Gly Glu Gly Asn Thr Asn Thr Phe Ser Pro
        35   40   45
Lys Ser Thr Thr Asp Ala Ala Gly Thr Thr Tyr Ser Leu Thr Gly Glu
        50   55   60
Val Leu Tyr Ile Asp Pro Gly Lys Gly Gly Ser Ile Thr Gly Thr Cys
65   70   75   80
Phe Val Glu Thr Ala Gly Asp Leu Thr Phe Leu Gly Asn Gly Asn Thr
            85   90   95
Leu Lys Phe Leu Ser Val Asp Ala Gly Ala Asn Ile Ala Val Ala His
            100   105   110
Val Gln Gly Ser Lys Asn Leu Ser Phe Thr Asp Phe Leu Ser Leu Val
            115   120   125
Ile Thr Glu Ser Pro Lys Ser Ala Val Thr Thr Gly Lys Gly Ser Leu
            130   135   140
Val Ser Leu Gly Ala Val Gln Leu Gln Asp Ile Asn Thr Leu Val Leu
145   150   155   160
Thr Ser Asn Ala Ser Val Glu Asp Gly Gly Val Ile Lys Gly Asn Ser
                165   170   175
Cys Leu Ile Gln Gly Ile Lys Asn Ser Ala Ile Phe Gly Gln Asn Thr
            180   185   190
Ser Ser Lys Lys Gly Gly Ala Ile Ser Thr Thr Gln Gly Leu Thr Ile
            195   200   205
Glu Asn Asn Leu Gly Thr Leu Lys Phe Asn Glu Asn Lys Ala Val Thr
            210   215   220
Ser Gly Gly Ala Leu Asp Leu Gly Ala Ala Ser Thr Phe Thr Ala Asn
225   230   235   240
His Glu Leu Ile Phe Ser Gln Asn Lys Thr Ser Gly Asn Ala Ala Asn
                245   250   255
Gly Gly Ala Ile Asn Cys Ser Gly Asp Leu Thr Phe Thr Asp Asn Thr
            260   265   270
Ser Leu Leu Leu Gln Glu Asn Ser Thr Met Gln Asp Gly Gly Ala Leu
            275   280   285

357

```
Cys Ser Thr Gly Thr Ile Ser Ile Thr Gly Ser Asp Ser Ile Asn Val
    290                 295                 300
Ile Gly Asn Thr Ser Gly Gln Lys Gly Gly Ala Ile Ser Ala Ala Ser
305                 310                 315                 320
Leu Lys Ile Leu Gly Gly Gln Gly Gly Ala Leu Phe Ser Asn Asn Val
                325                 330                 335
Val Thr His Ala Thr Pro Leu Gly Gly Ala Ile Phe Ile Asn Thr Gly
                340                 345                 350
Gly Ser Leu Gln Leu Phe Thr Gln Gly Gly Asp Ile Val Phe Glu Gly
                355                 360                 365
Asn Gln Val Thr Thr Thr Ala Pro Asn Ala Thr Thr Lys Arg Asn Val
    370                 375                 380
Ile His Leu Glu Ser Thr Ala Lys Trp Thr Gly Leu Ala Ala Ser Gln
385                 390                 395                 400
Gly Asn Ala Ile Tyr Phe Tyr Asp Pro Ile Thr Thr Asn Asp Thr Gly
                405                 410                 415
Ala Ser Asp Asn Leu Arg Ile Asn Glu Val Ser Ala Asn Gln Lys Leu
                420                 425                 430
Ser Gly Ser Ile Val Phe Ser Gly Glu Arg Leu Ser Thr Ala Glu Ala
                435                 440                 445
Ile Ala Glu Asn Leu Thr Ser Arg Ile Asn Gln Pro Val Thr Leu Val
    450                 455                 460
Glu Gly Ser Leu Val Leu Lys Gln Gly Val Thr Leu Ile Thr Gln Gly
465                 470                 475                 480
Phe Ser Gln Glu Pro Glu Ser Thr Leu Leu Leu Asp Leu Gly Thr Ser
                485                 490                 495
Leu
```

```
<210> 21
<211> 450
<212> PRT
<213> Chlamydia pneumoniae

<400> 21
Ala Ser Thr Glu Asp Ile Val Ile Thr Asn Leu Ser Ile Asn Ala Asp
  1               5                  10                  15
Thr Ile Tyr Gly Lys Asn Pro Ile Asn Ile Val Ala Ser Ala Ala Asn
                20                  25                  30
Lys Asn Ile Thr Leu Thr Gly Thr Leu Ala Leu Val Asn Ala Asp Gly
            35                  40                  45
Ala Phe Tyr Glu Asn His Thr Leu Gln Asp Ser Gln Asp Tyr Ser Phe
        50                  55                  60
Val Lys Leu Ser Pro Gly Ala Gly Gly Thr Ile Ile Thr Gln Asp Ala
65                  70                  75                  80
Ser Gln Lys Pro Leu Glu Val Ala Pro Ser Arg Pro His Tyr Gly Tyr
                85                  90                  95
Gln Gly His Trp Asn Val Gln Val Ile Pro Gly Thr Gly Thr Gln Pro
            100                 105                 110
Ser Gln Ala Asn Leu Glu Trp Val Arg Thr Gly Tyr Leu Pro Asn Pro
        115                 120                 125
Glu Arg Gln Gly Ser Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Val
    130                 135                 140
Asp Gln Arg Ala Ile Gln Glu Ile Met Val Asn Ser Ser Gln Ile Leu
145                 150                 155                 160
Cys Gln Glu Arg Gly Val Trp Gly Ala Gly Ile Ala Asn Phe Leu His
                165                 170                 175
Arg Asp Lys Ile Asn Glu His Gly Tyr Arg His Ser Gly Val Gly Tyr
            180                 185                 190
Leu Val Gly Val Gly Thr His Ala Phe Ser Asp Ala Thr Ile Asn Ala
        195                 200                 205
```

358

```
Ala Phe Cys Gln Leu Phe Ser Arg Asp Lys Asp Tyr Val Val Ser Lys
    210                 215                 220
Asn His Gly Thr Ser Tyr Ser Gly Val Val Phe Leu Glu Asp Thr Leu
225                 230                 235                 240
Glu Phe Arg Ser Pro Gln Gly Phe Tyr Thr Asp Ser Ser Ser Glu Ala
                245                 250                 255
Cys Cys Asn Gln Val Val Thr Ile Asp Met Gln Leu Ser Tyr Ser His
                260                 265                 270
Arg Asn Asn Asp Met Lys Thr Lys Tyr Thr Thr Tyr Pro Glu Ala Gln
            275                 280                 285
Gly Ser Trp Ala Asn Asp Val Phe Gly Leu Glu Phe Gly Ala Thr Thr
    290                 295                 300
Tyr Tyr Tyr Pro Asn Ser Thr Phe Leu Phe Asp Tyr Tyr Ser Pro Phe
305                 310                 315                 320
Leu Arg Leu Gln Cys Thr Tyr Ala His Gln Glu Asp Phe Lys Glu Thr
                325                 330                 335
Gly Gly Glu Val Arg His Phe Thr Ser Gly Asp Leu Phe Asn Leu Ala
                340                 345                 350
Val Pro Ile Gly Val Lys Phe Glu Arg Phe Ser Asp Cys Lys Arg Gly
                355                 360                 365
Ser Tyr Glu Leu Thr Leu Ala Tyr Val Pro Asp Val Ile Arg Lys Asp
    370                 375                 380
Pro Lys Ser Thr Ala Thr Leu Ala Ser Gly Ala Thr Trp Ser Thr His
385                 390                 395                 400
Gly Asn Asn Leu Ser Arg Gln Gly Leu Gln Leu Arg Leu Gly Asn His
                405                 410                 415
Cys Leu Ile Asn Pro Gly Ile Glu Val Phe Ser His Gly Ala Ile Glu
                420                 425                 430
Leu Arg Gly Ser Ser Arg Asn Tyr Asn Ile Asn Leu Gly Gly Lys Tyr
    435                 440                 445
Arg Phe
450
```

        <210> 22
        <211> 705
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 22
```
Lys Leu Trp Ser Asn Pro Asn Leu Arg Leu Met Lys Arg Cys Phe Leu
 1               5                10                  15
Phe Leu Ala Ser Phe Val Leu Met Gly Ser Ser Ala Asp Ala Leu Thr
                20                25                  30
His Gln Glu Ala Val Lys Lys Lys Asn Ser Tyr Leu Ser His Phe Lys
        35                  40                  45
Ser Val Ser Gly Ile Val Thr Ile Glu Asp Gly Val Leu Asn Ile His
    50                  55                  60
Asn Asn Leu Arg Ile Gln Ala Asn Lys Val Tyr Val Glu Asn Thr Val
65                  70                  75                  80
Gly Gln Ser Leu Lys Leu Val Ala His Gly Asn Val Met Val Asn Tyr
                85                  90                  95
Arg Ala Lys Thr Leu Val Cys Asp Tyr Leu Glu Tyr Tyr Glu Asp Thr
                100                 105                 110
Asp Ser Cys Leu Leu Thr Asn Gly Arg Phe Ala Met Tyr Pro Trp Phe
        115                 120                 125
Leu Gly Gly Ser Met Ile Thr Leu Thr Pro Glu Thr Ile Val Ile Arg
    130                 135                 140
Lys Gly Tyr Ile Ser Thr Ser Glu Gly Pro Lys Lys Asp Leu Cys Leu
145                 150                 155                 160
Ser Gly Asp Tyr Leu Glu Tyr Ser Ser Asp Ser Leu Leu Ser Ile Gly
                165                 170                 175
```

359

```
Lys Thr Thr Leu Arg Val Cys Arg Ile Pro Ile Leu Phe Leu Pro Pro
        180                 185                 190
Phe Ser Ile Met Pro Met Glu Ile Pro Lys Pro Pro Ile Asn Phe Arg
        195                 200                 205
Gly Gly Thr Gly Gly Phe Leu Gly Ser Tyr Leu Gly Met Ser Tyr Ser
        210                 215                 220
Pro Ile Ser Arg Lys His Phe Ser Ser Thr Phe Phe Leu Asp Ser Phe
225                 230                 235                 240
Phe Lys His Gly Val Gly Met Gly Phe Asn Leu His Cys Ser Gln Lys
                245                 250                 255
Gln Val Pro Glu Asn Val Phe Asn Met Lys Ser Tyr Tyr Ala His Arg
                260                 265                 270
Leu Ala Ile Asp Met Ala Glu Ala His Asp Arg Tyr Arg Leu His Gly
                275                 280                 285
Asp Phe Cys Phe Thr His Lys His Val Asn Phe Ser Gly Glu Tyr His
290                 295                 300
Leu Ser Asp Ser Trp Glu Thr Val Ala Asp Ile Phe Pro Asn Asn Phe
305                 310                 315                 320
Met Leu Lys Asn Thr Gly Pro Thr Arg Val Asp Cys Thr Trp Asn Asp
                325                 330                 335
Asn Tyr Phe Glu Gly Tyr Leu Thr Ser Ser Val Lys Val Asn Ser Phe
                340                 345                 350
Gln Asn Ala Asn Gln Glu Leu Pro Tyr Leu Thr Leu Arg Gln Tyr Pro
                355                 360                 365
Ile Ser Ile Tyr Asn Thr Gly Val Tyr Leu Glu Asn Ile Val Glu Cys
        370                 375                 380
Gly Tyr Leu Asn Phe Ala Phe Ser Asp His Ile Val Gly Glu Asn Phe
385                 390                 395                 400
Ser Ser Leu Arg Leu Ala Ala Arg Pro Lys Leu His Lys Thr Val Pro
                405                 410                 415
Leu Pro Ile Gly Thr Leu Ser Ser Thr Leu Gly Ser Ser Leu Ile Tyr
                420                 425                 430
Tyr Ser Asp Val Pro Glu Ile Ser Ser Arg His Ser Gln Leu Ser Ala
        435                 440                 445
Lys Leu Gln Leu Asp Tyr Arg Phe Leu Leu His Lys Ser Tyr Ile Gln
        450                 455                 460
Arg Arg His Ile Ile Glu Pro Phe Val Thr Phe Ile Thr Glu Thr Arg
465                 470                 475                 480
Pro Leu Ala Lys Asn Glu Asp His Tyr Ile Phe Ser Ile Gln Asp Ala
                485                 490                 495
Phe His Ser Leu Asn Leu Leu Lys Ala Gly Ile Asp Thr Ser Val Leu
                500                 505                 510
Ser Lys Thr Asn Pro Arg Phe Pro Arg Ile His Ala Lys Leu Trp Thr
        515                 520                 525
Thr His Ile Leu Ser Asn Thr Glu Ser Lys Pro Thr Phe Pro Lys Thr
        530                 535                 540
Ala Cys Glu Leu Ser Leu Pro Phe Gly Lys Lys Asn Thr Val Ser Leu
545                 550                 555                 560
Asp Ala Glu Trp Ile Trp Lys Lys His Cys Trp Asp His Met Asn Ile
                565                 570                 575
Arg Trp Glu Trp Ile Gly Asn Asp Asn Val Ala Met Thr Leu Glu Ser
                580                 585                 590
Leu His Arg Ser Lys Tyr Ser Leu Ile Lys Cys Asp Arg Glu Asn Phe
        595                 600                 605
Ile Leu Asp Val Ser Arg Pro Ile Asp Gln Leu Leu Asp Ser Pro Leu
        610                 615                 620
Ser Asp His Arg Asn Leu Ile Leu Gly Lys Leu Phe Val Arg Pro His
625                 630                 635                 640
Pro Cys Trp Asn Tyr Arg Leu Ser Leu Arg Tyr Gly Trp His Arg Gln
                645                 650                 655




                              360
```

```
Asp Thr Pro Asn Tyr Leu Glu Tyr Gln Met Ile Leu Gly Thr Lys Ile
        660                 665                 670
Phe Glu His Trp Gln Leu Tyr Gly Val Tyr Glu Arg Arg Glu Ala Asp
        675                 680                 685
Ser Arg Phe Phe Phe Phe Leu Lys Leu Asp Lys Pro Lys Lys Pro Pro
    690                 695                 700
Phe
705


        <210> 23
        <211> 588
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 23
Cys Ser Arg Ser Pro Tyr Pro Asn Ile Glu Ile Leu Ala Arg Gly Val
  1           5                 10                  15
Glu His Arg Ser Met Gly Leu Phe His Leu Thr Leu Phe Gly Leu Leu
        20                  25                  30
Leu Cys Ser Leu Pro Ile Ser Leu Val Ala Lys Phe Pro Glu Ser Val
        35                  40                  45
Gly His Lys Ile Leu Tyr Ile Ser Thr Gln Ser Thr Gln Gln Ala Leu
    50                  55                  60
Ala Thr Tyr Leu Glu Ala Leu Asp Ala Tyr Gly Asp His Asp Phe Phe
65                  70                  75                  80
Val Leu Arg Lys Ile Gly Glu Asp Tyr Leu Lys Gln Ser Ile His Ser
                85                  90                  95
Ser Asp Pro Gln Thr Arg Lys Ser Thr Ile Ile Gly Ala Gly Leu Ala
        100                 105                 110
Gly Ser Ser Glu Ala Leu Asp Val Leu Ser Gln Ala Met Glu Thr Ala
        115                 120                 125
Asp Pro Leu Gln Gln Leu Leu Val Leu Ser Ala Val Ser Gly His Leu
    130                 135                 140
Gly Lys Thr Ser Asp Asp Leu Leu Phe Lys Ala Leu Ala Ser Pro Tyr
145                 150                 155                 160
Pro Val Ile Arg Leu Glu Ala Ala Tyr Arg Leu Ala Asn Leu Lys Asn
                165                 170                 175
Thr Lys Val Ile Asp His Leu His Ser Phe Ile His Lys Leu Pro Glu
            180                 185                 190
Glu Ile Gln Cys Leu Ser Ala Ala Ile Phe Leu Arg Leu Glu Thr Glu
        195                 200                 205
Glu Ser Asp Ala Tyr Ile Arg Asp Leu Leu Ala Ala Lys Lys Ser Ala
    210                 215                 220
Ile Arg Ser Ala Thr Ala Leu Gln Ile Gly Glu Tyr Gln Gln Lys Arg
225                 230                 235                 240
Phe Leu Pro Thr Leu Arg Asn Leu Leu Thr Ser Ala Ser Pro Gln Asp
                245                 250                 255
Gln Glu Ala Ile Leu Tyr Ala Leu Gly Lys Leu Lys Asp Gly Gln Ser
        260                 265                 270
Tyr Tyr Asn Ile Lys Lys Gln Leu Gln Lys Pro Asp Val Asp Val Thr
    275                 280                 285
Leu Ala Ala Ala Gln Ala Leu Ile Ala Leu Gly Lys Glu Glu Asp Ala
    290                 295                 300
Leu Pro Val Ile Lys Lys Gln Ala Leu Glu Glu Arg Pro Arg Ala Leu
305                 310                 315                 320
Tyr Ala Leu Arg His Leu Pro Ser Glu Ile Gly Ile Pro Ile Ala Leu
            325                 330                 335
Pro Ile Phe Leu Lys Thr Lys Asn Ser Glu Ala Lys Leu Asn Val Ala
            340                 345                 350
Leu Ala Leu Leu Glu Leu Gly Cys Asp Thr Pro Lys Leu Leu Glu Tyr
    355                 360                 365
```

361

```
Ile Thr Glu Arg Leu Val Gln Pro His Tyr Asn Glu Thr Leu Ala Leu
    370                 375             380
Ser Phe Ser Lys Gly Arg Thr Leu Gln Asn Trp Lys Arg Val Asn Ile
385             390             395                         400
Ile Val Pro Gln Asp Pro Gln Glu Arg Glu Arg Leu Leu Ser Thr Thr
            405             410             415
Arg Gly Leu Glu Glu Gln Ile Leu Thr Phe Leu Phe Arg Leu Pro Lys
            420             425             430
Glu Ala Tyr Leu Pro Cys Ile Tyr Lys Leu Leu Ala Ser Gln Lys Thr
        435             440             445
Gln Leu Ala Thr Thr Ala Ile Ser Phe Leu Ser His Thr Ser His Gln
    450             455             460
Glu Ala Leu Asp Leu Leu Phe Gln Ala Ala Lys Leu Pro Gly Glu Pro
465             470             475                         480
Ile Ile Arg Ala Tyr Ala Asp Leu Ala Ile Tyr Asn Leu Thr Lys Asp
            485             490             495
Pro Glu Lys Lys Arg Ser Leu His Asp Tyr Ala Lys Lys Leu Ile Gln
            500             505             510
Glu Thr Leu Leu Phe Val Asp Thr Glu Asn Gln Arg Pro His Pro Ser
    515             520             525
Met Pro Tyr Leu Arg Tyr Gln Val Thr Pro Glu Ser Arg Thr Lys Leu
    530             535             540
Met Leu Asp Ile Leu Glu Thr Leu Ala Thr Ser Lys Ser Ser Glu Asp
545             550             555                         560
Ile Arg Leu Leu Ile Gln Leu Met Thr Glu Gly Asp Ala Lys Asn Phe
            565             570             575
Pro Val Leu Ala Gly Leu Leu Ile Lys Ile Val Glu
            580             585
```

        <210> 24
        <211> 216
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 24
```
Thr Ile Leu Gln Val Ile Ser Asn Cys Cys Asn Val Ser Asn Thr Arg
1               5               10              15
Ser Phe Tyr Ser Met Ser Leu Pro Leu Val Leu Gly Ser Ser Ser Pro
            20              25              30
Arg Arg Lys Phe Ile Leu Glu Lys Phe Arg Val Pro Phe Thr Val Ile
        35              40              45
Pro Ser Asn Phe Asp Glu Ser Lys Val Ser Tyr Ser Gly Asp Pro Ile
    50              55              60
Ala Tyr Thr Gln Glu Leu Ala Ala Gln Lys Ala Tyr Ala Val Ser Glu
65              70              75                          80
Leu His Ser Pro Cys Asp Cys Ile Ile Leu Thr Gly Asp Thr Ile Val
            85              90              95
Ser Tyr Asp Gly Arg Ile Phe Thr Lys Pro Gln Asp Lys Ala Asp Ala
            100             105             110
Ile Gln Met Leu Lys Thr Leu Arg Asn Gln Thr His Asp Val Val Thr
    115             120             125
Ser Ile Ala Val Leu His Lys Gly Lys Leu Leu Thr Gly Ser Glu Thr
    130             135             140
Ser Gln Ile Ser Leu Thr Met Ile Pro Asp His Arg Ile Glu Ser Tyr
145             150             155             160
Ile Asp Thr Val Gly Thr Leu Asn Asn Cys Gly Ala Tyr Asp Val Cys
            165             170             175
His Gly Gly Leu Ile Leu Lys Lys Val His Gly Cys Val Tyr Asn Val
            180             185             190
Gln Gly Leu Pro Ile Gln Thr Leu Lys Tyr Leu Leu Glu Glu Leu Asn
            195             200             205
```

```
Ile Asp Leu Trp Asp Tyr Ser Ile
    210                 215


        <210> 25
        <211> 548
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 25
Glu Asn Arg Ala Lys Leu Leu Tyr Ser Lys Gln His Phe Val Met Leu
 1               5                  10                  15
Ser Ala Met Ser Ile Val Leu Asp Lys Ile Gly Lys Ser Leu Gly Thr
            20                  25                  30
Arg Ile Leu Phe Asp Asp Val Ser Val Val Phe Asn Pro Gly Asn Cys
        35                  40                  45
Tyr Gly Leu Thr Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu Leu Lys
    50                  55                  60
Ile Ile Met Gly Met Ile Glu Pro Thr Arg Gly Ser Ile Ser Leu Pro
65                  70                  75                  80
Lys Lys Val Gly Ile Leu Arg Gln Asn Ile Asp Ser Phe His Asp Thr
                85                  90                  95
Thr Val Leu Asp Cys Val Ile Met Gly Asn Thr Arg Leu Trp Glu Ala
            100                 105                 110
Leu Gln Arg Arg Asp Asn Leu Tyr Leu Gln Glu Phe Thr Asp Ala Ile
        115                 120                 125
Gly Met Glu Leu Gly Glu Ile Glu Glu Ile Ile Gly Glu Glu Asn Gly
    130                 135                 140
Tyr Arg Ala Asp Ser Glu Ala Glu Glu Leu Leu Thr Gly Ile Gly Ile
145                 150                 155                 160
Pro Asn Glu Met Phe Asp Lys Lys Met Ala Met Ile Pro Ile Asp Leu
                165                 170                 175
Gln Phe Arg Val Leu Leu Cys Gln Ala Leu Phe Gly His Pro Glu Ala
            180                 185                 190
Leu Leu Leu Asp Glu Pro Thr Asn His Leu Asp Leu Tyr Ser Ile Asn
        195                 200                 205
Trp Leu Gly Asn Phe Leu Lys Asp Tyr Glu Gly Thr Val Ile Val Val
    210                 215                 220
Ser His Asp Arg His Phe Leu Asn Thr Ile Thr Thr His Ile Ala Asp
225                 230                 235                 240
Ile Asp Tyr Asp Thr Ile Ile Ile Tyr Pro Gly Asn Tyr Asp Asp Met
                245                 250                 255
Val Glu Met Lys Thr Ala Ser Arg Glu Gln Glu Lys Ala Asp Ile Lys
            260                 265                 270
Ser Lys Glu Lys Lys Ile Ser Gln Leu Lys Glu Phe Val Ala Lys Phe
        275                 280                 285
Gly Ala Gly Ser Arg Ala Ser Gln Val Gln Ser Arg Leu Arg Glu Ile
    290                 295                 300
Lys Lys Leu Gln Pro Gln Glu Leu Lys Lys Ser Asn Ile Gln Arg Pro
305                 310                 315                 320
Tyr Ile Arg Phe Pro Leu Ser Asp Lys Ser Ser Gly Lys Val Val Leu
                325                 330                 335
Ser Leu Glu Ala Ile Thr Lys Asp Tyr Gly Asp His Gln Val Ile His
            340                 345                 350
Pro Phe Ser Leu Glu Ile Tyr Gln Gly Asp Lys Leu Gly Ile Ile Gly
        355                 360                 365
Asn Asn Gly Leu Gly Lys Thr Thr Leu Met Lys Leu Leu Ala Gly Val
    370                 375                 380
Glu Ala Pro Ser Ser Gly Ser Ile Lys Leu Gly His Gln Ala Ile Cys
385                 390                 395                 400
Ser Tyr Phe Pro Gln Asn His Ser Asp Val Leu Ala Asp Cys Gly Gln
                405                 410                 415
```

363

```
Glu Thr Leu Phe Glu Trp Leu Arg Asn Arg Lys Thr Gly Ile Asn Asp
        420                 425                 430
Gln Glu Ile Arg Ser Val Leu Gly Lys Met Leu Phe Gly Gly Asp Asp
        435                 440                 445
Ala Phe Lys Gln Ile Gln Ala Leu Ser Gly Gly Glu Thr Ala Arg Leu
    450                 455                 460
Leu Met Ala Gly Met Met Leu Glu Asn His Asn Val Leu Ile Leu Asp
465                 470                 475                 480
Glu Ala Asn Asn His Leu Asp Leu Glu Ser Val Ser Ala Leu Ser Trp
                485                 490                 495
Ala Ile Asn Asp Tyr Lys Gly Thr Ala Ile Phe Val Ser His Asp Arg
            500                 505                 510
Gly Leu Ile Gln Asp Cys Ala Thr Lys Leu Leu Ile Phe Asp Lys Asp
        515                 520                 525
Lys Ile Thr Phe Phe Asp Gly Thr Met Val Asp Tyr Thr Ala Gly His
    530                 535                 540
Lys Gln Leu Leu
545
```

<210> 26
<211> 315
<212> PRT
<213> Chlamydia pneumoniae

<400> 26

```
Arg Glu Val Met Ile Ala Ser Ile Tyr Ser Phe Leu Asp Tyr Leu Lys
  1             5                  10                  15
Met Val Lys Ser Ala Ser Pro His Thr Leu Arg Asn Tyr Cys Leu Asp
            20                  25                  30
Leu Asn Gly Leu Lys Ile Phe Leu Glu Glu Arg Gly Asn Leu Ala Pro
            35                  40                  45
Ser Ser Pro Leu Gln Leu Ala Thr Glu Lys Arg Lys Val Ser Glu Leu
    50                  55                  60
Pro Phe Ser Leu Phe Thr Lys Glu His Val Arg Met Tyr Ile Ala Lys
65                  70                  75                  80
Leu Ile Glu Asn Gly Lys Ala Lys Arg Thr Ile Lys Arg Cys Leu Ser
                85                  90                  95
Ser Ile Lys Ser Phe Ala His Tyr Cys Val Ile Gln Lys Ile Leu Leu
            100                 105                 110
Glu Asn Pro Ala Glu Thr Ile His Gly Pro Arg Leu Pro Lys Glu Leu
    115                 120                 125
Pro Ser Pro Met Thr Tyr Ala Gln Val Glu Val Leu Met Ala Thr Pro
    130                 135                 140
Asp Ile Ser Lys Tyr His Gly Leu Arg Asp Arg Cys Leu Met Glu Leu
145                 150                 155                 160
Phe Tyr Ser Ser Gly Leu Arg Ile Ser Glu Ile Val Ala Val Asn Lys
                165                 170                 175
Gln Asp Phe Asp Leu Ser Thr His Leu Ile Arg Ile Arg Gly Lys Gly
            180                 185                 190
Lys Lys Glu Arg Ile Ile Pro Val Thr Ser Asn Ala Ile Gln Trp Ile
        195                 200                 205
Gln Ile Tyr Leu Asn His Pro Asp Arg Lys Arg Leu Glu Lys Asp Pro
    210                 215                 220
Gln Ala Ile Phe Leu Asn Arg Phe Gly Arg Arg Ile Ser Thr Arg Ser
225                 230                 235                 240
Ile Asp Arg Ser Phe Gln Glu Tyr Leu Arg Arg Ser Gly Leu Ser Gly
                245                 250                 255
His Ile Thr Pro His Thr Ile Arg His Thr Ile Ala Thr His Trp Leu
            260                 265                 270
Glu Ser Gly Met Asp Leu Lys Thr Ile Gln Ala Leu Leu Gly His Ser
        275                 280                 285
```

```
Ser Leu Glu Thr Thr Thr Val Tyr Thr Gln Val Ser Val Lys Leu Lys
    290               295               300
Lys Gln Thr His Gln Glu Ala His Pro His Ala
305               310               315
```

```
        <210> 27
        <211> 309
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 27
Ile Leu Met Ser Ser Arg Glu Leu Ile Ile Leu Gly Cys Ser Ser Gln
1           5               10              15
Gln Pro Thr Arg Thr Arg Asn Gln Gly Ala Tyr Leu Phe Arg Trp Asn
        20              25              30
Gly Glu Gly Leu Leu Phe Asp Pro Gly Glu Gly Thr Gln Arg Gln Phe
        35              40              45
Ile Phe Ala Asn Ile Ala Pro Thr Thr Val Asn Arg Ile Phe Val Ser
        50              55              60
His Phe His Gly Asp His Cys Leu Gly Leu Gly Ser Met Leu Met Arg
65              70              75              80
Leu Asn Leu Asp Lys Val Ser His Pro Ile His Cys Tyr Tyr Pro Ala
        85              90              95
Ser Gly Lys Lys Tyr Phe Asp Arg Leu Arg Tyr Gly Thr Ile Tyr His
        100             105             110
Glu Thr Ile Gln Val Val Glu His Pro Ile Ser Glu Glu Gly Ile Val
        115             120             125
Glu Asp Phe Gly Ser Phe Arg Ile Glu Ala Gln Arg Leu Gln His Gln
        130             135             140
Val Asp Thr Leu Gly Trp Arg Ile Thr Glu Pro Asp Thr Ile Lys Phe
145             150             155             160
Leu Pro Lys Glu Leu Glu Ser Arg Gly Ile Arg Gly Leu Ile Ile Gln
        165             170             175
Asp Leu Ile Arg Asp Gln Glu Ile Ser Ile Gly Gly Ser Thr Val Tyr
        180             185             190
Leu Ser Asp Val Ser Tyr Val Arg Lys Gly Asp Ser Ile Ala Ile Ile
        195             200             205
Ala Asp Thr Leu Pro Cys Gln Ala Ala Ile Asp Leu Ala Lys Asn Ser
        210             215             220
Cys Met Met Leu Cys Glu Ser Thr Tyr Leu Glu Gln His Arg His Leu
225             230             235             240
Ala Glu Ser His Phe His Met Thr Ala Lys Gln Ala Ala Thr Leu Ala
        245             250             255
Lys Arg Ala Ala Thr Gln Lys Leu Ile Leu Thr His Phe Ser Ala Arg
        260             265             270
Tyr Leu Asn Leu Asp Asp Phe Tyr Lys Glu Ala Ser Ala Val Phe Pro
        275             280             285
Asn Val Ser Val Ala Gln Glu Tyr Arg Ser Tyr Pro Phe Pro Lys Asn
        290             295             300
Pro Leu Leu Asn Lys
305
```

```
        <210> 28
        <211> 292
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 28
Ser Asn Phe Ala Met Ser His Leu Ile Pro Ser Leu Arg Asn Ser Val
    1           5               10              15
```

Thr Ser Tyr Phe His Lys Pro Gln Pro Ile Lys Gln Ala Ala Pro Ser
            20   25   30
Lys Ser Ile Arg Asp Ile Cys Asn Ile Ala Tyr Leu Ile Ile Ile Cys
            35   40   45
Val Leu Val Val Val Val Leu Val Gly Ala Met Leu Cys Met Phe Ile
    50   55   60
Pro Ser Val Gly Ile Pro Leu Cys Leu Ser Ser Leu Ala Leu Leu Val
65   70   75   80
Leu Leu Ser Ile Phe Asn Pro Cys Leu Ile Asn Trp Ile Ser Thr Lys
                85   90   95
Lys Thr Lys Glu Ile Ala Pro Lys Asp Ala Ser Glu Ser Gln Pro Thr
                100   105   110
Lys Ser Ala Ser Arg Lys Gly Ser Pro Gln Leu Ser Pro His His Asp
            115   120   125
His Glu Pro Lys Asn Phe Ile Arg Thr Gln Leu Glu Lys Gly Val Asn
    130   135   140
Tyr Val Thr Asn Lys Phe Lys Ser Gly Glu Glu Ser Pro His Ile Ser
145   150   155   160
Asp Glu His His Ser Pro Arg Gln Ser Lys Arg Ser Ser Glu Ile Glu
                165   170   175
Ser Ser Asp Glu Ser Ser Pro Glu Leu His Arg Lys Ala Lys Gly Lys
            180   185   190
Ala Pro His Thr Ala Thr Thr Lys Glu Ser Lys Thr Ser Thr Thr Glu
    195   200   205
Ser Ser Lys Lys Lys Lys Lys Thr Lys His Ser Leu His Arg Thr Thr
    210   215   220
Ser Ser Ile His Lys Arg Ser Ala Pro Lys Pro Met Val Pro Ser Lys
225   230   235   240
Lys Arg Lys Pro Val Leu Leu Lys Lys Thr Val Pro Leu Pro Ile Glu
                245   250   255
Asp Leu Glu His Gln Ser Ser Gly Asn Glu Ser Ser Asp Ser Ser Ser
                260   265   270
Pro Pro Pro Val Gln Arg Lys Ala Ile Leu Pro Trp Phe Cys Lys Gln
    275   280   285
Pro Thr Asp Pro
    290

        <210> 29
        <211> 825
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 29
Pro Ser Ile Arg Thr Ile Val Asp Ser Thr Thr Asn Ser Asp Ser Pro
 1   5   10   15
Ile Leu Asp Pro Asn Pro Glu Asp Val Glu Lys Leu Leu Asp Glu Ser
            20   25   30
Glu Glu Glu Ser Glu Asp Gln Ser Thr Glu Arg Leu Leu Pro Ser Glu
            35   40   45
Leu Phe Ile Leu Pro Leu Asn Lys Arg Pro Phe Phe Pro Gly Met Ala
    50   55   60
Ala Pro Ile Leu Ile Glu Ser Gly Pro Tyr Tyr Glu Val Leu Lys Val
65   70   75   80
Leu Ala Lys Ser Ser Gln Lys Tyr Ile Gly Leu Val Leu Thr Lys Lys
                85   90   95
Glu Asn Ala Asp Ile Leu Lys Val Ser Phe Asn Gln Leu His Lys Thr
                100   105   110
Gly Val Ala Ala Arg Ile Leu Arg Ile Met Pro Ile Glu Gly Gly Ser
            115   120   125
Ala Gln Val Leu Leu Ser Ile Glu Glu Arg Ile Arg Ile Ile Glu Pro
    130   135   140

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Ile Lys Asp Lys Tyr Leu Lys Ala Arg Val Ser Tyr His Ala Asp Asn
145   150   155   160
Lys Glu Leu Thr Glu Glu Leu Lys Ala Tyr Ser Ile Ser Ile Val Ser
          165   170   175
Val Ile Lys Asp Leu Leu Lys Leu Asn Pro Leu Phe Lys Glu Glu Leu
          180   185   190
Gln Ile Phe Leu Gly His Ser Asp Phe Thr Glu Pro Gly Lys Leu Ala
          195   200   205
Asp Phe Ser Val Ala Leu Thr Thr Ala Thr Arg Glu Glu Leu Gln Glu
210   215   220
Val Leu Glu Thr Thr Asn Met His Asp Arg Ile Asp Lys Ala Leu Ile
225   230   235   240
Leu Leu Lys Lys Glu Leu Asp Leu Ser Arg Leu Gln Ser Ser Ile Asn
          245   250   255
Gln Lys Ile Glu Ala Thr Ile Thr Lys Ser Gln Lys Glu Phe Phe Leu
          260   265   270
Lys Glu Gln Leu Lys Thr Ile Lys Lys Glu Leu Gly Leu Glu Lys Glu
          275   280   285
Asp Arg Ala Ile Asp Ile Glu Lys Phe Ser Glu Arg Leu Arg Lys Arg
          290   295   300
His Val Pro Asp Tyr Ala Met Glu Val Ile Gln Asp Glu Ile Glu Lys
305   310   315   320
Leu Gln Thr Leu Glu Thr Ser Ser Ala Glu Tyr Thr Val Cys Arg Asn
          325   330   335
Tyr Leu Asp Trp Leu Thr Ile Ile Pro Trp Gly Ile Gln Ser Lys Glu
          340   345   350
Tyr His Asp Leu Lys Lys Ala Glu Ile Val Leu Asn Lys Asp His Tyr
          355   360   365
Gly Leu Asp Glu Ile Lys Gln Arg Ile Leu Glu Leu Ile Ser Val Gly
370   375   380
Lys Leu Ser Lys Gly Leu Lys Gly Ser Ile Ile Cys Leu Val Gly Pro
385   390   395   400
Pro Gly Val Gly Lys Thr Ser Ile Gly Arg Ser Ile Ala Lys Val Leu
          405   410   415
His Arg Lys Phe Phe Arg Phe Ser Val Gly Gly Met Arg Asp Glu Ala
          420   425   430
Glu Ile Lys Gly His Arg Arg Thr Tyr Ile Gly Ala Met Pro Gly Lys
          435   440   445
Met Val Gln Ala Leu Lys Gln Ser Gln Ala Met Asn Pro Val Ile Met
          450   455   460
Ile Asp Glu Val Asp Lys Ile Gly Ala Ser Tyr His Gly Asp Pro Ala
465   470   475   480
Ser Ala Leu Leu Glu Val Leu Asp Pro Glu Gln Asn Lys Asp Phe Leu
          485   490   495
Asp His Tyr Leu Asp Val Arg Val Asp Leu Ser Asn Val Leu Phe Ile
          500   505   510
Leu Thr Ala Asn Val Leu Asp Thr Ile Pro Asp Pro Leu Leu Asp Arg
          515   520   525
Met Glu Ile Leu Arg Leu Ser Gly Tyr Ile Leu Glu Glu Lys Leu Gln
          530   535   540
Ile Ala Lys Lys Tyr Leu Val Pro Lys Ala Arg Lys Glu Ile Gly Leu
545   550   555   560
Thr Ala Ser Glu Val Asn Phe Gln Pro Glu Ala Leu Lys Tyr Met Ile
          565   570   575
Asn Asn Tyr Ala Arg Glu Ala Gly Val Arg Thr Leu Asn Gly Asn Ile
          580   585   590
Lys Lys Val Leu Arg Lys Val Ala Leu Lys Ile Val Gln Asn Gln Glu
          595   600   605
Lys Pro Lys Ser Lys Lys Ile Thr Phe Lys Ile Ser Ser Lys Asn Leu
610   615   620

Gln Thr Tyr Leu Gly Lys Pro Ile Phe Ser Ser Asp Arg Phe Tyr Glu
625   630   635   640
Ser Thr Pro Val Gly Val Ala Thr Gly Leu Ala Trp Thr Ser Leu Gly
                645   650   655
Gly Ala Thr Leu Tyr Ile Glu Ser Val Gln Val Ser Ser Leu Lys Thr
                660   665   670
Asp Met His Leu Thr Gly Gln Ala Gly Glu Val Met Lys Glu Ser Ser
                675   680   685
Gln Ile Ala Trp Thr Tyr Leu His Ser Ala Leu His Arg Tyr Ala Pro
        690   695   700
Gly Tyr Thr Phe Phe Pro Lys Ser Gln Val His Ile His Ile Pro Glu
705   710   715   720
Gly Ala Thr Pro Lys Asp Gly Pro Ser Ala Gly Ile Thr Met Val Thr
                725   730   735
Ser Leu Leu Ser Leu Leu Leu Glu Thr Pro Val Val Asn Asn Leu Gly
                740   745   750
Met Thr Gly Glu Ile Thr Leu Thr Gly Arg Val Leu Gly Val Gly Gly
        755   760   765
Ile Arg Glu Lys Leu Ile Ala Ala Arg Arg Ser Arg Leu Asn Ile Leu
770   775   780
Ile Phe Pro Glu Asp Asn Arg Arg Asp Tyr Glu Glu Leu Pro Ala Tyr
785   790   795   800
Leu Lys Thr Gly Leu Lys Ile His Phe Val Ser His Tyr Asp Asp Val
                805   810   815
Leu Lys Val Ala Phe Pro Lys Leu Lys
        820   825

        <210> 30
        <211> 262
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 30
Arg Met Phe Leu Gln Phe Phe His Pro Ile Val Phe Ser Asp Gln Ser
1   5   10   15
Leu Ser Phe Leu Pro Tyr Leu Gly Lys Ser Ser Gly Ile Ile Glu Lys
                20   25   30
Cys Ser Asn Ile Val Glu His Tyr Leu His Leu Gly Gly Asp Thr Ser
        35   40   45
Val Ile Ile Thr Gly Val Ser Gly Ala Thr Phe Leu Ser Val Asp His
        50   55   60
Ala Leu Pro Ile Ser Lys Ser Glu Lys Ile Ile Lys Ile Leu Ser Tyr
65   70   75   80
Ile Leu Ile Leu Pro Leu Ile Leu Ala Leu Phe Ile Lys Ile Val Leu
                85   90   95
Arg Ile Ile Leu Phe Phe Lys Tyr Arg Gly Leu Ile Leu Asp Val Lys
        100   105   110
Lys Glu Asp Leu Lys Lys Thr Leu Thr Pro Asp Gln Glu Asn Leu Ser
        115   120   125
Leu Pro Leu Pro Ser Pro Thr Thr Leu Lys Lys Ile His Ala Leu His
        130   135   140
Ile Leu Val Arg Ser Gly Lys Thr Tyr Asn Glu Leu Ile Gln Glu Gly
145   150   155   160
Phe Ser Phe Thr Lys Ile Thr Asp Leu Gly Gln Ala Pro Ser Pro Lys
                165   170   175
Gln Asp Ile Gly Phe Ser Tyr Asn Ser Leu Leu Pro Asn Phe Tyr Phe
                180   185   190
His Ser Leu Val Ser Val Pro Asn Ile Ser Gly Glu Glu Arg Ala Leu
        195   200   205
Asn Tyr His Lys Glu Gln Gln Glu Glu Met Ala Val Lys Leu Lys Thr
210   215   220

                            368

Met Gln Ala Cys Ser Phe Val Phe Arg Ser Leu His Leu Pro Ser Met
225   230   235   240
Gln Thr Lys Asp Lys Lys Ala Gly Phe Gly Leu Leu Thr Phe Phe Pro
                245   250   255
Trp Lys Ile Tyr Pro Leu
            260

        <210> 31
        <211> 150
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 31
Ser Asn Lys Asn Glu Arg Asn Glu Asn Ile Tyr Cys Phe Asn Leu Phe
1   5   10   15
Arg Tyr Ile Arg Phe Phe Ala Ala Leu Asn Ile Arg Met Asn Asp Gly
                20   25   30
Leu Arg Phe Cys Tyr Ser Tyr Ile Leu Leu Arg Pro Met Leu Leu Asp
            35   40   45
Ser Ser Leu Leu Arg Lys Gly Gly Gln Glu Leu Leu Lys Lys Phe Gln
        50   55   60
Ile Lys Leu Arg Thr Thr Ser Ile Lys Ser Ser Leu Ile Ser Leu Arg
65   70   75   80
Gln Gln Leu Gly Lys Arg Glu Ala Thr Gln Ser Asp Ile Leu Tyr Gly
                85   90   95
Thr Ser Arg Phe Gln Tyr Leu Asn Ser Phe Glu Ile Glu Asp Pro Arg
            100   105   110
Ile Pro Pro Thr Met Ala Ala Gln Leu Gln Glu Ile Thr Trp Ser Arg
        115   120   125
Ser Val Met Glu Leu Lys Ile Lys Phe Tyr Val Tyr Leu Asn Ser Glu
        130   135   140
Arg Asn Lys Thr Lys Pro
145   150

        <210> 32
        <211> 230
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 32
Leu Lys Gly Val Cys Trp Tyr Ser Leu Phe Phe Tyr Ile Lys Asn Arg
1   5   10   15
Arg Met Tyr Phe Tyr Lys Tyr Val Ile Ile Asp Thr Ser Gly Tyr Tyr
                20   25   30
Pro Phe Leu Ala Cys Val Asp Asn Gln Gln Val Leu Glu His Trp Ser
            35   40   45
Leu Pro Val Gly Pro Asp Leu Gly Ile Val Leu Glu Phe Leu Phe Lys
        50   55   60
Ser Lys Asn Leu Ser Phe Gln Gly Val Ala Val Ala Leu Gly Pro Gly
65   70   75   80
Asn Phe Ser Ala Thr Arg Ile Gly Ile Ser Phe Ala Gln Gly Leu Ala
                85   90   95
Met Ala Lys Asn Val Pro Leu Leu Gly Tyr Ser Ser Leu Glu Gly Tyr
                100   105   110
Leu Leu Ser Lys Asp Glu Lys Lys Ala Leu Met Leu Pro Leu Gly Lys
        115   120   125
Arg Gly Gly Val Leu Thr Leu Ser Ser Glu Ile Pro Glu Glu Gly Leu
        130   135   140
Asn Glu Lys Arg Arg Gly Val Gly Pro Gly Ala Leu Leu Ser Tyr Glu
145   150   155   160

                            369

Glu Ala Ser Asp Tyr Cys Val Ala His Gly Tyr Tyr His Val Ile Ser
                165   170   175
Pro Asn Pro Gln Leu Phe Ala Ser Ser Phe Ser Asp Lys Ile Thr Val
                180   185   190
Glu Glu Val Ala Pro Ser Val Glu Gln Ile Arg Arg His Val Ile Ser
                195   200   205
Gln Phe Met Phe Val Glu Tyr Asp Lys Gln Leu Ser Pro Asp Tyr Arg
210   215   220
Ser Tyr Ser Cys Ile Phe
225   230

        <210> 33
        <211> 59
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 33
Cys Met Pro Ser Val Lys Val Arg Val Gly Glu Pro Val Asp Arg Ala
1   5   10   15
Leu Arg Ile Leu Lys Lys Lys Ile Asp Lys Glu Gly Ile Leu Lys Ala
                20   25   30
Ala Lys Ser His Arg Phe Tyr Asp Lys Pro Ser Val Lys Lys Arg Ala
        35   40   45
Lys Ser Lys Ala Ala Ala Lys Tyr Arg Ser Arg
        50   55

        <210> 34
        <211> 406
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 34
Ser Leu Ile Gly Asn Val Val Phe Val Gly Ser Val Ser Gly Met Asp
1   5   10   15
Tyr Tyr Ser Ile Leu Gly Ile Ser Lys Thr Ala Ser Ala Glu Glu Ile
                20   25   30
Lys Lys Ala Tyr Arg Lys Leu Ala Val Lys Tyr His Pro Asp Lys Asn
        35   40   45
Pro Gly Asp Ala Ala Ala Glu Lys Arg Phe Lys Glu Val Ser Glu Ala
        50   55   60
Tyr Glu Val Leu Ser Asp Pro Gln Lys Arg Asp Ser Tyr Asp Arg Phe
65   70   75   80
Gly Lys Asp Gly Pro Phe Ala Gly Ala Gly Gly Phe Gly Gly Ala Gly
                85   90   95
Gly Met Gly Asn Met Glu Asp Ala Leu Arg Thr Phe Met Gly Ala Phe
                100   105   110
Gly Gly Glu Phe Gly Gly Gly Ser Phe Phe Asp Gly Leu Phe Gly Gly
                115   120   125
Leu Gly Glu Ala Phe Gly Met Arg Ser Asp Pro Ala Gly Ala Arg Gln
        130   135   140
Gly Ala Ser Lys Lys Val His Ile Asn Leu Thr Phe Glu Glu Ala Ala
145   150   155   160
His Gly Val Glu Lys Glu Leu Val Val Ser Gly Tyr Lys Ser Cys Glu
                165   170   175
Thr Cys Ser Gly Gln Gly Ala Val Asn Pro Gln Gly Ile Lys Ser Cys
                180   185   190
Glu Arg Cys Lys Gly Ser Gly Gln Val Val Gln Ser Arg Gly Phe Phe
        195   200   205
Ser Met Ala Ser Thr Cys Pro Glu Cys Gly Gly Glu Gly Arg Ile Ile
210   215   220
Thr Asp Pro Cys Ser Ser Cys Arg Gly Gln Gly Arg Val Lys Asp Lys

                                370

```
225                    230                    235                    240
Arg Ser Val His Val His Ile Pro Ala Gly Val Asp Ser Gly Met Arg
                   245                    250                    255
Leu Lys Met Glu Gly Tyr Gly Asp Ala Gly Gln Asn Gly Ala Pro Ser
                   260                    265                    270
Gly Asp Leu Tyr Val Phe Ile Asp Val Glu Ser His Pro Val Phe Glu
                   275                    280                    285
Arg Arg Gly Asp Asp Leu Ile Leu Glu Leu Pro Ile Gly Phe Val Asp
              290                    295                    300
Ala Ala Leu Gly Met Lys Lys Glu Ile Pro Thr Leu Leu Lys Thr Glu
305                    310                    315                    320
Gly Ser Cys Arg Leu Thr Val Pro Glu Gly Ile Gln Ser Gly Thr Ile
                   325                    330                    335
Leu Lys Val Arg Asn Gln Gly Phe Pro Asn Val His Gly Lys Gly Arg
                   340                    345                    350
Gly Asp Leu Leu Val Arg Ile Ser Val Glu Thr Pro Gln Asn Leu Ser
                   355                    360                    365
Glu Glu Gln Lys Glu Leu Leu Arg Thr Phe Ala Ser Thr Glu Lys Ala
              370                    375                    380
Glu Asn Phe Pro Lys Lys Arg Ser Phe Leu Asp Lys Ile Lys Gly Phe
385                    390                    395                    400
Phe Ser Asp Phe Thr Val
                   405
```

```
        <400> 35
Glu Arg Ser Met Gly Val Val Gln Asn Gln Val Ile Ser Ser Ile Arg
1               5                   10                  15
Asp Val Leu Lys Leu Val Trp Glu Leu Arg Phe Ala Glu His Lys Met
              20                  25                  30
Leu Leu Leu Ser Arg Gln Ser Gly Ser Gly Gly Thr Phe Gln Leu Ser
         35                  40                  45
Cys Ala Gly His Glu Leu Ala Gly Val Leu Ala Gly Lys Ser Leu Ile
         50                  55                  60
Pro Gly Lys Asp Trp Ser Phe Pro Tyr Tyr Arg Asp Gln Gly Phe Pro
65                  70                  75                  80
Ile Gly Leu Gly Cys Asp Leu Ser Glu Ile Phe Ala Ser Phe Leu Ala
                   85                  90                  95
Arg Thr Thr Pro Asn His Ser Ser Ala Arg Met Met Pro Tyr His Tyr
              100                 105                 110
Ser His Lys Lys Leu Arg Ile Cys Cys Gln Ser Ser Val Val Gly Thr
         115                 120                 125
Gln Phe Leu Gln Ala Ala Gly Arg Ala Trp Ala Val Lys His Ser Ser
         130                 135                 140
Ala Asp Glu Val Val Tyr Val Ser Gly Gly Asp Gly Ala Thr Ser Gln
145                 150                 155                 160
Gly Glu Phe His Glu Met Leu Asn Phe Val Ala Leu His Gln Leu Pro
              165                 170                 175
Leu Ile Thr Val Ile Gln Asn Asn His Trp Ala Ile Ser Val Pro Phe
              180                 185                 190
Glu Asp Gln Cys Gly Ala Asp Leu Ala Ser Leu Gly Arg Cys His Gln
         195                 200                 205
Gly Leu Ala Val Tyr Glu Val Asp Gly Gly Asn Tyr Thr Ser Leu Thr
         210                 215                 220
Glu Thr Phe Ser His Ala Val Asp Gln Ala Arg Gln His Ser Val Pro
225                 230                 235                 240
```

```
Ala Leu Ile Leu Ile Asp Val Val Arg Leu Ser Ser His Ser Asn Ser
            245                     250             255
Asp Asn Gln Glu Lys Tyr Arg Ser Ala Leu Asp Leu Lys Leu Ser Met
            260                 265             270
Asp Lys Asp Pro Leu Ile Leu Leu Glu Lys Glu Ala Ile Asn Val Phe
            275             280                 285
Gly Leu Ser Pro Phe Glu Ile Glu Glu Ile Lys Ala Glu Ala Gln Glu
    290             295                 300
Glu Val Arg Lys Ser Cys Glu Ile Ala Glu Ala Leu Pro Phe Pro Ser
305             310                 315                 320
Lys Gly Ser Thr Ser His Glu Val Phe Ser Pro Tyr Thr Glu Thr Leu
                325             330                 335
Ile Asp Tyr Glu Asn Ser Glu Ser Ala Gln Asn Leu Arg Asn Ser Glu
            340             345                 350
Pro Lys Val Met Arg Asp Ala Ile Ser Glu Ala Leu Val Glu Glu Met
            355             360                 365
Thr Arg Asp Ser Gly Val Ile Val Phe Gly Glu Asp Val Ala Gly Asp
    370             375                 380
Lys Gly Gly Val Phe Gly Val Thr Arg Asn Leu Thr Glu Lys Phe Gly
385             390                 395                 400
Pro Gln Arg Cys Phe Asn Ser Pro Leu Ala Glu Ala Thr Ile Ile Gly
            405             410                 415
Thr Ala Ile Gly Met Ala Leu Asp Gly Ile His Lys Pro Val Val Glu
            420             425                 430
Ile Gln Phe Ala Asp Tyr Ile Trp Pro Gly Ile Asn Gln Leu Phe Ser
            435             440                 445
Glu Ala Ser Ser Ile Tyr Tyr Arg Ser Ala Gly Glu Trp Glu Val Pro
    450             455                 460
Leu Val Ile Arg Ala Pro Ser Gly Gly Tyr Ile Gln Gly Gly Pro Tyr
465             470                 475                 480
His Ser Gln Ser Ile Glu Gly Phe Leu Ala His Cys Pro Gly Ile Lys
                485                 490                 495
Val Ala Tyr Pro Ser Asn Ala Ala Asp Ala Lys Ala Leu Leu Lys Ala
            500             505                 510
Ala Ile Arg Asp Pro Asn Pro Val Val Phe Leu Glu His Lys Ala Leu
            515             520                 525
Tyr Gln Arg Arg Ile Phe Ser Ala Cys Pro Val Phe Ser His Asp Tyr
    530             535                 540
Val Leu Pro Phe Gly Lys Ala Ala Ile Val His Pro Gly Lys Asp Leu
545             550                 555                 560
Thr Ile Val Ser Trp Gly Met Pro Leu Val Leu Ser Leu Glu Val Ala
                565                 570                 575
Gln Glu Leu Ala Ser Arg Gly Ile Ser Ile Glu Val Ile Asp Leu Arg
            580                 585                 590
Thr Met Val Pro Cys Asp Phe Ala Thr Val Leu Lys Ser Leu Glu Lys
            595             600                 605
Thr Gly Arg Leu Leu Val Ile His Glu Ala Ser Glu Phe Cys Gly Phe
    610             615                 620
Gly Ser Glu Leu Val Ala Thr Met Ser Glu Gln Gly Tyr Ala Tyr Leu
625             630                 635                 640
Asp Ala Pro Ile Arg Arg Leu Gly Gly Leu His Ala Pro Val Pro Tyr
            645             650                 655
Ser Lys Val Leu Glu Asn Glu Val Leu Pro His Lys Glu Ser Ile Leu
            660             665                 670
Gln Ala Ala Lys Ser Leu Ala Glu Phe
    675             680
```

<400> 36
Val Asn Phe Leu Leu Pro Thr Thr Cys Arg Gly Ile Leu Met Ala Glu
1   5   10   15
Ile Ser Thr Pro Ser Leu Pro Asp Ser Ser Ile Val Ser Gln Lys Thr
            20   25   30
Pro Pro Val Pro Asp Pro Asp Ser Ser Pro Asp His Ile Pro Thr Ile
        35   40   45
Pro Thr Gln Ala Pro Phe Lys Pro Gln Arg Lys Lys Glu Thr Pro Ser
    50   55   60
Ser Ile Val Asn Ala Ile Ala Phe Ala Ile Leu Ala Phe Leu Ser Cys
65   70   75   80
Leu Gly Gly Val Phe Ala Ile Cys Leu Gly Cys Ser Leu Glu Ile Thr
                85   90   95
Met Pro Leu Phe Ile Leu Thr Ala Val Phe Ile Ala Phe Thr Leu Leu
            100   105   110
Tyr Phe Ile His Tyr Leu Glu Lys Pro Lys Ile Pro Glu Pro Leu Pro
        115   120   125
Thr Pro Pro Pro Ser Pro Thr Leu Arg Ala Pro Thr Leu Thr Pro Glu
    130   135   140
Ile Pro Ala Pro Ala Pro Gly Ile Pro Leu Pro Pro Thr Leu Pro Lys
145   150   155   160
Val Asp Arg Thr Lys Leu Thr Cys Asn Pro Asp Ile His Tyr Pro Ser
            165   170   175
Thr Tyr Asp Pro Lys Ala Cys Phe Ser Leu Leu Lys Gln Leu Phe Ser
            180   185   190
Leu Asp Pro Glu Thr Arg Pro Glu Asp Arg Lys Tyr Ser Asn Lys Leu
    195   200   205
Ala Ser Ile Leu Leu Arg Ser Lys Glu Lys Ser Gly Phe Arg Phe His
    210   215   220
Cys Phe Lys Gly His Phe Ser His Asp Lys Ile Leu Asn Lys Lys Ser
225   230   235   240
Gly Ala Val Val Ile Ser Ser His Ser Ser Met Asp Phe Ser Thr Thr
                245   250   255
Leu Gly Arg Ala Phe Ala Val Thr Thr Cys Leu Gln Arg Ser Cys Trp
            260   265   270
Glu Lys Ile Lys Asn Asn Ile Pro Thr Pro Glu Lys His Leu Pro Ile
            275   280   285
Gly Ser Cys Val Ser Gly Pro Trp Asp Val Glu Glu Gly Ala Gln Leu
    290   295   300
Tyr Thr Ser His Leu Ile Val Ile Asn Pro Pro Thr Leu Glu Thr Leu
305   310   315   320
Ile Lys Glu Lys Met Arg Arg Ala Ile Thr Leu Lys Asp Phe Ser Met
            325   330   335
Lys Glu Ala Phe Thr Asn Leu Val Leu Ala Tyr Leu Gln Cys Phe Asp
            340   345   350
Ile Cys Ile Glu His Asn Leu Glu Ser Val Gln Leu Glu Val Phe Gly
        355   360   365
Leu Asn Asn Leu Ser Ala Asp Gln Glu Glu Phe Thr Thr Trp Glu Ser
    370   375   380
Cys Cys His Leu Ala Leu Leu Glu Ser Val Arg Ile Leu Leu Ala Ser
385   390   395   400
Lys Glu Glu Tyr Ala Leu Ser Asn Val Ser Val Asn Ser Ile Ser Gln
            405   410   415
Val Pro Leu Gln Thr Ala Cys Arg Ala Leu Phe Leu Asn
            420   425

<210> 37
<211> 526
<212> PRT
<213> Chlamydia pneumoniae

373

<400> 37

```
Ala Arg Thr Thr Leu Glu Glu Asp Ala Gly Ser Ser Leu Lys Pro Leu
1               5                   10                  15
Pro Lys Thr Phe Pro Cys Ala Thr Ala Leu Tyr Ile Thr His Arg Arg
            20                  25                  30
Glu Arg Lys Ser Glu His Gln Met Trp Asn Arg Cys Gln Val Phe Ser
        35                  40                  45
Ser Phe Phe Phe Arg Tyr Pro Ile Ser Ser Trp Leu Ile Arg Leu Arg
    50                  55                  60
Ala Ser Cys Glu Cys Phe Gln Gln Arg His Pro Ile Phe Leu Cys Gly
65              70                  75                      80
Leu Tyr Trp Leu Ala Gly Ile Thr Ser Arg Gly His Pro Glu Cys Ser
                85                  90                  95
Ala Leu Ile Leu Ile Phe Leu Gly Met Phe Leu Pro Arg Asn Pro Lys
            100                 105                 110
Gln Trp Leu Pro Leu Ala Ser Ala Trp Ile Ile Ser Leu Met Leu Thr
        115                 120                 125
Pro Ala Pro Phe Leu His Asp Gly Pro Ile Ser Gly Thr Phe Val Ile
    130                 135                 140
His His Ala Gly Gly Gln Gly Thr Tyr Tyr Gly Glu Ala Leu Cys Ile
145             150                 155                     160
Gln Thr Pro Cys Gly Lys Arg Ala His His Leu Ser Cys Gln Ile Leu
            165                 170                 175
Ser Glu Ser Arg Leu Glu Leu Lys Lys Val Tyr Glu Leu Glu Gly Thr
        180                 185                 190
Leu His His Thr Ser Gln Ile Val Phe Lys Ser Asn Ala Cys Tyr Lys
        195                 200                 205
Glu Ile Pro Arg Ser Arg Phe Tyr Ile Met Lys Glu Lys Cys Arg Glu
    210                 215                 220
Ser Ser Cys His Phe Leu Asn His Arg Phe Pro Ser Ser Glu Val Gly
225             230                 235                     240
Pro Phe Ala Ser Ser Leu Leu Leu Gly Thr Pro Leu Pro Gln Asn Leu
                245                 250                 255
Arg Asp Leu Phe Arg Gln Lys Gly Leu Ser His Leu Phe Ala Ile Ser
            260                 265                 270
Gly Trp His Phe Ser Leu Cys Ala Thr Thr Leu Trp Met Leu Cys Ala
        275                 280                 285
Leu Leu Pro Leu Lys Ile Lys Lys Ile Leu Ser Phe Ile Val Leu Thr
    290                 295                 300
Ser Leu Ala Cys Ile Phe Pro Met Ser Leu Ser Val Trp Arg Ser Trp
305             310                 315                     320
Ile Ser Val Thr Leu Leu Cys Phe Ser Trp Cys Phe Ser Gly Ser Cys
                325                 330                 335
Ser Gly Leu Asn Arg Leu Gly Ala Gly Phe Ile Leu Cys Ser Ile Phe
            340                 345                 350
Phe Ser Pro Phe Ser Pro Thr Phe Val Leu Ser Phe Leu Ala Thr Leu
        355                 360                 365
Gly Ile Leu Leu Phe Phe Pro Lys Ile Phe Ser Phe Leu Tyr Thr Pro
    370                 375                 380
Trp Thr Gln Phe Leu Ser Pro Phe Trp Leu Tyr Pro Ile Arg Tyr Leu
385             390                 395                     400
Ala Met Thr Leu Ala Ile Ser Leu Ser Ala Gln Leu Phe Ile Val Leu
            405                 410                 415
Pro Ile Met Gln Tyr Phe Gly Ser Leu Pro Leu Glu Gly Leu Leu Tyr
        420                 425                 430
Asn Leu Ile Val Pro Phe Thr Ile Leu Pro Ile Ile Val Phe Leu Ile
        435                 440                 445
Ala Thr Ile Ile Leu Pro Cys Cys Ser Pro Ile Thr Glu Ala Leu Ile
    450                 455                 460
Gln Gly Phe Leu Ser His Pro Trp Leu His Asn Pro Asn Ile Leu Lys
465                 470                 475                 480
```

374

Thr Leu Ser Phe Ala Pro Val Pro Pro Trp Met Leu Thr Leu Ala Ser
                485   490   495
Leu Ile Leu Phe Phe Ile Gly Ile Leu Arg Thr Asn Val Ser Pro Tyr
            500   505   510
Ala Ser Ile Ser Ala Thr Ser Tyr Arg Phe Ile Glu Thr Leu
            515   520   525

        <210> 38
        <211> 276
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 38
Ala Lys Ser Leu Trp Asp Ser Glu Arg Lys Lys Met Lys Lys Pro Asp
1   5   10   15
Asn Asp Ser Thr Phe Asp Val Arg Ser Phe Phe Pro Phe Asp Val Leu
            20   25   30
Cys Ile Glu Gln Leu Arg Lys Glu Met Ser Trp Glu Val Val Ser Ala
        35   40   45
Lys Ile Pro Arg Leu Pro Arg Gly Trp Tyr Glu Leu Met Gly Leu Ser
    50   55   60
Lys Glu Asp Arg Ile Asp Phe Cys Leu Asp Phe Trp Cys Ser Val Leu
65   70   75   80
Gly Ile Glu His Lys Glu Ser Pro Ser Ile Cys Arg Phe Phe Ser Leu
                85   90   95
Leu Glu Thr Ile Glu Val Tyr Ile Tyr Arg Leu Glu Lys Glu Pro Tyr
            100   105   110
Gln Leu Lys Met Phe Tyr Val Phe Arg Asp Gly Arg Cys Gly Phe Gln
        115   120   125
Gly Glu Pro Pro Leu Leu Asp Phe Leu Gly His His Arg Leu Pro Pro
    130   135   140
Leu Gly Asp Arg His Tyr Glu Lys Phe Phe Ser Ile His Asn Gly Phe
145   150   155   160
Gly Lys Trp Glu Asp Glu Gly Ile Phe Pro Met Arg Ser Leu Ala Lys
                165   170   175
Val Gln Gln Lys Leu Arg Gln Gln Leu Val Val Met Asn Lys Met Gln
            180   185   190
Ala Glu Asp Asn Cys Tyr Ser Leu Gly Ile Phe Pro Phe Tyr Gly Tyr
        195   200   205
Glu Glu Pro Phe Ala Tyr Gln Ser Phe Phe Phe Asp Pro Glu Ile Arg
    210   215   220
Arg Asp Leu Pro Ser Pro Asn Val Leu Leu Asn Glu Glu Ser Leu Glu
225   230   235   240
His Arg Ser Leu Glu Thr Ile Glu Leu Leu His Leu Ser Lys Ser Tyr
                245   250   255
Tyr Pro Ser Phe Leu Ser Trp Leu Glu Asn Tyr Leu His Ser Glu Glu
            260   265   270
Val Tyr Asn Glu
        275

        <210> 39
        <211> 138
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 39
Lys Leu Leu Ser Cys Cys Ile Cys Leu Arg Ala Ile Ile Leu Leu Ser
1   5   10   15
Ser Arg Gly Trp Arg Thr Ile Tyr Ile Val Arg Arg Cys Ile Met Asn
            20   25   30

Glu Pro Thr Arg Thr Tyr Leu Glu Ser Glu Lys Asp Thr Gln Asp Gln
    35   40   45
Ile Glu Glu Leu Gln Ala Thr Cys Ile Val Lys Asn Ala Ala Gly Ile
50   55   60
His Val Arg Pro Ala Gly Val Ile Val Arg Leu Phe Asp Gly Glu Pro
65   70   75   80
Cys Asp Val His Phe Thr Tyr Ala Gly Lys Thr Ile Asn Ala Lys Ser
                85   90   95
Ile Met Ser Ile Leu Met Leu Gly Ala Pro Gln Gly Gly Glu Ile Leu
            100   105   110
Val Thr Ile Arg Ser Lys Glu Ala His Arg Ile Leu Gln Lys Ile Gln
        115   120   125
Asp Ala Phe Ser Ser Gly Phe Gly Glu Leu
    130   135

        <400> 40
Met Asp Thr Gln Ser Ser Thr Gly Asn Glu Glu Trp Arg Ile Ala Gly
1   5   10   15
Thr Ser Ile Val Ser Gly Met Ala Leu Gly Lys Val Phe Phe Leu Gly
            20   25   30
Thr Ser Pro Leu His Val Arg Glu Leu Thr Leu Pro Gln Glu Glu Val
        35   40   45
Glu His Glu Ile His Arg Tyr Tyr Lys Ala Leu Asn Arg Ser Lys Ser
    50   55   60
Asp Ile Val Ala Leu Glu Gln Glu Val Thr Gly Gln Gln Gly Leu Gln
65   70   75   80
Glu Val Ser Ser Ile Leu Gln Ala His Leu Glu Ile Met Lys Asp Pro
                85   90   95
Leu Leu Thr Glu Glu Val Val Asn Thr Ile Arg Lys Asp Arg Lys Asn
            100   105   110
Ala Glu Tyr Val Phe Ser Ser Val Met Gly Lys Ile Glu Glu Ser Leu
        115   120   125
Thr Ala Val Arg Gly Met Pro Ser Val Val Asp Arg Val Gln Asp Ile
        130   135   140
His Asp Ile Ser Asn Arg Val Ile Gly His Leu Cys Cys Gln His Lys
145   150   155   160
Ser Ser Leu Gly Glu Ser Asp Gln Asn Leu Ile Ile Phe Ser Glu Glu
                165   170   175
Leu Thr Pro Ser Glu Val Ala Ser Ala Asn Ser Ala Tyr Ile Arg Gly
            180   185   190
Phe Val Ser Leu Val Gly Ala Ala Thr Ser His Thr Ala Ile Val Ser
            195   200   205
Arg Ala Lys Ser Ile Pro Tyr Leu Ala Asn Ile Ser Glu Glu Leu Trp
    210   215   220
Asn Ile Ala Lys Arg Tyr Asn Gly Lys Leu Val Leu Ile Asp Gly Tyr
225   230   235   240
Arg Gly Glu Leu Ile Phe Asn Pro Lys Pro Ala Thr Leu Gln Ser Cys
                245   250   255
Tyr Lys Lys Glu Leu Ser Val Val Ala His Thr Ser Gln Arg Leu Val
            260   265   270
Arg Lys Ser Leu His Pro Ile Val Ser Ser His Ala Gly Ser Asp Lys
        275   280   285
Asp Val Glu Asp Leu Leu Glu Asn Phe Pro Gln Thr Ser Ile Gly Leu
    290   295   300
Phe Arg Ser Glu Phe Leu Ala Val Ile Leu Gly Arg Leu Pro Thr Leu
305   310   315   320

376

Arg Glu Gln Val Asp Leu Tyr Glu Lys Leu Ala Arg Phe Pro Gly Asp
                325   330   335
Ser Pro Ser Val Leu Arg Leu Phe Asp Phe Gly Glu Asp Lys Pro Cys
                340   345   350
Pro Gly Ile Lys Asn Lys Lys Glu Arg Ser Ile Arg Trp Leu Leu Asp
                355   360   365
Tyr Ser Val Ile Leu Glu Asp Gln Leu Gln Ala Ile Ala Lys Ala Ser
        370   375   380
Leu Gln Gly Ser Ile Lys Val Leu Ile Pro Gly Val Ser Asp Val Ser
385   390   395   400
Glu Ile Ile Glu Val Lys Lys Lys Trp Glu Thr Ile Arg Thr Arg Phe
                405   410   415
Pro Lys Gly His Lys Val Ser Trp Gly Thr Met Ile Glu Phe Pro Ser
                420   425   430
Ala Val Trp Met Ile Glu Glu Ile Leu Pro Glu Cys Asp Phe Leu Ser
        435   440   445
Ile Gly Thr Asn Asp Leu Val Gln Tyr Thr Leu Gly Ile Ser Arg Glu
    450   455   460
Ser Ala Leu Pro Lys His Leu Asn Val Thr Leu Pro Pro Ala Val Ile
465   470   475   480
Arg Met Ile His His Val Leu Gln Ala Ala Lys Gln Asn Gln Val Pro
                485   490   495
Val Ser Ile Cys Gly Glu Ala Ala Gly Gln Leu Ser Leu Thr Pro Leu
                500   505   510
Phe Ile Gly Leu Gly Val Gln Glu Leu Ser Val Ala Met Pro Val Ile
        515   520   525
Asn Arg Leu Arg Asn His Ile Ala Leu Leu Glu Leu Asn Ser Cys Leu
    530   535   540
Glu Ile Thr Glu Ala Leu Leu Gln Ala Lys Thr Cys Ser Glu Val Glu
545   550   555   560
Glu Leu Leu Asn Arg Asn Asn Lys Ile Thr Ser
                565   570

        <210> 41
        <211> 98
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 41
Ile Ser Met Gly Ser Gly Tyr Ala Lys Lys Lys Glu Ala Lys Ile
1   5   10   15
Met Glu Gln Gln Phe Leu Glu Met Glu Ala Ser Leu Leu Glu Lys Arg
                20   25   30
Tyr Glu Gly Gln Ala Gly Asn Gly Leu Val Ser Val Val Ile Asn Gly
        35   40   45
Lys Cys Asp Leu Ile Ser Val Lys Val Gln Pro Thr Cys Leu Asp Pro
    50   55   60
Glu Asp Pro Glu Val Ile Glu Asp Leu Phe Arg Ala Ala Phe Lys Leu
65   70   75   80
Ala Lys Glu Gln Met Asp Gln Glu Met Ser Leu Met Arg Ser Thr Met
                85   90   95
Pro Phe

        <210> 42
        <211> 452
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 42

```
Ala Phe Tyr Thr His Ser Leu Gly Tyr Thr Met Thr Leu Gln Pro Tyr
1               5                   10              15
Gln Ala Ser Ser Arg Lys Tyr Arg Pro Gln Ile Phe Arg Glu Ile Leu
            20              25                  30
Gly Gln Ser Ser Val Val Ala Val Leu Lys Asn Ala Leu Val Phe Asn
            35              40                  45
Arg Ala Ala His Ala Tyr Leu Phe Ser Gly Ile Arg Gly Thr Gly Lys
    50              55                  60
Thr Thr Leu Ala Arg Ile Leu Ala Lys Ala Leu Asn Cys Val His Leu
65              70                  75                  80
Ser Glu Asp Gly Glu Pro Cys Asn Gln Cys Phe Ser Cys Lys Glu Ile
            85                  90                  95
Ala Ser Gly Ser Ser Leu Asp Val Leu Glu Ile Asp Gly Ala Ser His
            100             105                 110
Arg Gly Ile Glu Asp Ile Arg Gln Ile Asn Glu Thr Val Leu Phe Thr
            115             120                 125
Pro Val Lys Ala Lys Phe Lys Ile Tyr Ile Ile Asp Glu Val His Met
    130             135                 140
Leu Thr Lys Glu Ala Phe Asn Ala Leu Leu Lys Thr Leu Glu Glu Pro
145             150                 155                 160
Pro Gln His Val Lys Phe Phe Phe Ala Thr Thr Glu Ile His Lys Ile
            165                 170                 175
Pro Gly Thr Ile Leu Ser Arg Cys Gln Lys Met His Leu Gln Arg Ile
            180                 185                 190
Pro Glu Lys Thr Ile Leu Glu Lys Leu Ser Leu Met Ala Gln Asp Asp
            195                 200                 205
His Ile Glu Ala Ser Gln Glu Ala Leu Ala Pro Ile Ala Arg Ala Ala
210             215                 220
Gln Gly Ser Leu Arg Asp Ala Glu Ser Leu Tyr Asp Tyr Val Ile Ser
225             230                 235                 240
Leu Phe Pro Lys Ser Leu Ser Pro Asp Thr Val Ala Gln Ala Leu Gly
            245                 250                 255
Phe Ala Ser Gln Asp Ser Leu Arg Thr Leu Asp Asn Ala Ile Leu Gln
            260                 265                 270
Arg Asp Tyr Ala Thr Ala Leu Gly Ile Val Thr Asp Phe Leu Asn Ser
            275                 280                 285
Gly Val Ala Pro Val Thr Phe Leu His Asp Leu Thr Leu Phe Tyr Arg
290                 295                 300
Asn Leu Leu Leu Thr Asn Ser Thr Thr Ser Lys Phe Ser Ser Gln Tyr
305                 310                 315                 320
Lys Thr Glu Gln Leu Leu Glu Ile Ile Asp Phe Leu Gly Glu Ser Ala
            325                 330                 335
Lys His Leu Gln Asn Thr Ile Phe Glu Gln Thr Phe Leu Glu Thr Val
            340                 345                 350
Ile Ile His Ile Ile Arg Ile Tyr Gln Arg Pro Val Leu Ser Glu Leu
            355                 360                 365
Ile Ser Ser Ile Lys Ser Arg Gln Phe Glu Gly Leu Arg Asn Ile Lys
370                 375                 380
Glu Pro Thr Leu Thr Gln Gln Val Ser Ala Pro Gln Pro Gln Pro Thr
385                 390                 395                 400
Tyr Lys Glu Gln Ser Phe Leu Glu Lys Lys Asn Gln Pro Ala Ala Glu
            405                 410                 415
Gly Lys Ile Ile Ser Val Glu Val Lys Ser Ser Ala Ser Ile Lys Ser
            420                 425                 430
Ala Ala Val Asp Thr Leu Leu Gln Phe Ala Val Val Glu Phe Ser Gly
            435                 440                 445
Ile Leu Arg Gln
450
```

378

<210> 43
<211> 485
<212> PRT
<213> Chlamydia pneumoniae

<400> 43

```
Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Gln His Ser Val
1               5                   10                  15
Gly Ser Ile Ser Ser Arg Tyr Lys Leu Arg Val Leu Ala Ile Thr Phe
            20                  25                  30
Leu Val Leu Gly Val Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
            35                  40                  45
Leu Gly Ile Pro Gly Leu Thr Ala Gly Val Ser Phe Gly Leu Gly Ile
    50                  55                  60
Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Cys
65                  70                  75                  80
Leu Leu Val Lys Arg Glu Val Ser Lys Val Cys Pro Glu Glu Ile Pro
                85                  90                  95
Ala Val Gln Pro Glu Glu Thr Pro Glu Gly Val Pro Val Thr Pro Phe
            100                 105                 110
Glu Lys Pro Ala Leu Asp Glu Ala Gln Lys Glu Gln Lys Thr Gln Lys
            115                 120                 125
Ile Leu Asp Gln Leu Pro Gln Glu Leu Asp Gln Leu Asp Arg Tyr Ile
    130                 135                 140
Gln Glu Ala Phe Ala Cys Leu Gly Pro Leu Lys Asp Leu Lys Tyr Glu
145                 150                 155                 160
Asp Gln Gly Phe Leu Gln Asp Val Lys Glu Glu Phe Gln Val Phe Asp
                165                 170                 175
Phe Val Gln Lys Asp Met Ile Ala Glu Phe Val Glu Leu Gln Gln Ile
            180                 185                 190
Leu Cys Gln Glu Gly Arg Leu Leu Glu Phe Val Ile Asn Gln Thr Arg
            195                 200                 205
Tyr Ile Gly Arg Asp Leu Phe Lys Arg Glu Asp Ser Leu Tyr Lys Leu
    210                 215                 220
Trp Glu Trp Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg Gly Glu Arg
225                 230                 235                 240
Leu Lys Lys Ser Ala Arg Glu Val Val Asp Arg Phe Met Arg Thr Thr
                245                 250                 255
Cys Asn Ile Arg Lys Ile Ala Met Thr Phe Asp Arg His Val Tyr Ser
            260                 265                 270
Val Ala Lys Thr Ala Phe Glu Lys Ala Phe Gly Ala Leu Glu Thr Cys
            275                 280                 285
Val Tyr Glu Ser Met Arg Glu Ser Tyr Arg Glu Ala Phe Cys Glu Tyr
    290                 295                 300
Glu Lys Ala Lys Leu Leu Gly Asp Glu Glu Lys Ser Ala His Ala Glu
305                 310                 315                 320
Gln Arg Phe Gln Asp Ile Lys Asn Arg Trp Glu Asp Val Lys Asp Ala
            325                 330                 335
Phe Phe Trp Val Lys Glu Asp Gly Lys Ile Glu Ile Asp Asp Ala Ile
            340                 345                 350
Gly Asn Ser Cys Lys Trp Ser Glu Arg Tyr Glu Glu His Arg Ile Thr
    355                 360                 365
Arg Ala Arg Trp Tyr Lys Val Ala Glu His Gln Leu Phe Asn Ala Thr
    370                 375                 380
Met Arg Val Lys Asp Ser Leu Arg Glu His Asn Glu Ala Arg Val Ala
385                 390                 395                 400
Phe Glu Lys Glu Arg Ser Lys Glu Asn Gln Arg Gln Val Gln Lys Lys
                405                 410                 415
Lys Glu Lys Arg Leu Arg Asp Leu Lys Glu Leu His Asp Gln Glu Leu
            420                 425                 430
```

379

```
Pro Arg Ala Gln Glu Arg Leu Arg Glu Leu Gln Ala Leu Tyr Pro Glu
        435                 440                 445
Ile Ala Val Ser Val Val Glu Ala Arg Arg Glu Val Ala Ser Asp Leu
    450                 455                 460
Glu Lys Ala His Glu Ser Ile Asp Lys His Tyr Gln Ser Cys Val Arg
465                 470                 475                 480
Glu Gln Glu Leu Tyr
                485


        <210> 44
        <211> 279
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 44
Glu Glu Glu Glu Lys Gln Glu Ala Glu Phe Arg Glu Asn Gly Thr Lys
1               5                   10                  15
Ile Arg Ser Met Glu Glu Val Ser Glu Tyr Leu Gln Gln Val Glu Asn
        20                  25                  30
Gln Leu Glu Ser Cys Ser Lys Arg Leu Thr Lys Met Glu Thr Phe Ala
        35                  40                  45
Leu Gly Val Arg Leu Glu Ala Lys Glu Glu Ile Glu Ser Ile Ile Leu
    50                  55                  60
Ser Asp Val Val Asn Arg Phe Glu Val Leu Cys Arg Asp Ile Glu Asp
65                  70                  75                  80
Met Leu Ser Arg Val Glu Glu Ile Glu Arg Met Leu Arg Met Ala Glu
            85                  90                  95
Leu Pro Leu Leu Pro Ile Lys Glu Ala Leu Thr Lys Ala Phe Val Gln
        100                 105                 110
His Asn Ser Cys Lys Glu Lys Leu Thr Lys Val Glu Pro Tyr Phe Lys
        115                 120                 125
Glu Ser Pro Ala Tyr Leu Thr Ser Glu Glu Arg Leu Gln Ser Leu Asn
    130                 135                 140
Gln Thr Leu Gln Arg Ala Tyr Lys Glu Ser Gln Lys Val Ser Gly Leu
145                 150                 155                 160
Glu Ser Glu Val Arg Ala Cys Arg Glu Gln Leu Lys Asp Gln Val Arg
            165                 170                 175
Gln Phe Glu Thr Gln Gly Val Ser Leu Ile Lys Glu Glu Ile Leu Phe
        180                 185                 190
Val Thr Ser Thr Phe Arg Thr Lys Phe Ser Tyr His Ser Phe Arg Leu
        195                 200                 205
His Val Pro Cys Met Arg Leu Tyr Glu Glu Tyr Tyr Asp Asp Ile Asp
    210                 215                 220
Leu Glu Arg Thr Arg Ala Arg Trp Met Ala Met Ser Glu Arg Tyr Arg
225                 230                 235                 240
Asp Ala Phe Gln Ala Phe Gln Glu Met Leu Lys Glu Gly Leu Val Glu
            245                 250                 255
Glu Ala Gln Ala Leu Arg Glu Thr Glu Tyr Trp Leu Tyr Arg Glu Glu
        260                 265                 270
Arg Lys Ser Lys Lys Lys His
        275


        <210> 45
        <211> 647
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 45
His His Arg Phe Ile Met Gln Val Pro Leu Ser Pro Gln Leu Pro Pro
1               5                   10                  15
```

```
Pro Pro Pro Asp His Ser Val Gly Ala Ser Phe Cys Leu Ser Lys Phe
            20                  25              30
Arg Val Leu Ala Ile Thr Phe Leu Val Leu Gly Val Leu Leu Leu Ile
        35                  40              45
Ser Gly Ala Leu Phe Leu Thr Leu Gly Ile Ser Gly Val Ser Leu Gly
        50                  55              60
Val Gly Leu Gly Leu Ser Ala Leu Gly Ser Val Leu Val Ile Ser Gly
65                      70              75              80
Phe Leu Leu Leu Leu Glu Arg Arg Glu Val Ser Gly Val Gly Leu Glu
                85                  90              95
Gly Ile Pro Thr Gly Ile Pro Val Gly Pro Ser Ala Glu Pro Ser Ser
            100                 105             110
Glu Glu Ile Gln Lys Lys Gln Lys Ala Lys Gln Ile Leu Asp Gln Leu
            115                 120             125
Pro Gln Glu Leu Asp Gln Leu Asp Thr Asp Ile Gln His Val Leu Ser
    130                 135             140
Cys Leu Gly Lys Leu Lys Asp Leu Lys Cys Lys Asp Arg Gly Leu Leu
145                 150             155             160
Lys Asp Ala Lys Glu Lys Leu Gln Val Phe Asp Phe Val Trp Lys Asp
                165             170             175
Met Met Met Glu Phe Val Glu Leu Gln Gln Val Met Asp Gln Glu Ser
            180             185             190
Arg Tyr Leu Glu Gly Leu Ile His Glu Val Gln Ser Ile Ala His Lys
        195             200             205
Leu Phe Val Asp Asp Val Asn Ile Arg Ser His Leu Gly Glu Ser Cys
    210             215             220
Gly Tyr Leu Pro Ser Glu Asp Val Arg Gly Glu Leu Leu Lys Arg Phe
225             230             235             240
Ala Lys Glu Val Val Ala Arg Phe Met Lys Val Thr Arg Asp Ile Arg
            245             250             255
Lys Ile Ala Met Ala Phe Asn Lys Asn Ala Tyr Gly Ala Ala Lys Asn
            260             265             270
Ala Phe Asp Lys Ala Phe Gly Ser Leu Glu Thr Cys Leu Tyr Lys Ser
        275             280             285
Leu Thr Lys Ser Tyr Arg Asp Thr Phe Cys Asp Tyr Lys Arg Ala Lys
    290             295             300
Ile Leu Pro Asp Glu Asn Asn Ser Ala Arg Ala Glu Gln Arg Phe Arg
305             310             315             320
Glu Val Lys Asp His Trp Glu Asp Leu Lys Glu Thr Val Phe Trp Val
            325             330             335
Lys Glu Asp Gly Arg Ile Asp Ile Glu Val Leu Thr Ala Val Gly Gly
            340             345             350
Trp Pro Asp Arg Tyr Pro Glu His Leu Ile Leu Glu Lys Arg Lys Asp
        355             360             365
Lys Val Met Ser His Gln Leu Trp Glu Ala Thr Met Arg Val Lys Glu
    370             375             380
Ala Glu Val Thr Tyr Ser Val Ala Arg Val Ala Phe Glu Lys Asp Gly
385             390             395             400
Ser Gln Gln Asn Gln Lys Lys Phe Gln Glu Lys Thr Lys Glu Arg Leu
            405             410             415
Arg Cys Leu Lys Asp Leu Arg Asp Gln Glu Cys His Arg Ala Gln Glu
        420             425             430
Arg Leu Glu Lys Leu Thr Ala Leu Tyr Pro Glu Val Ser Val Ser Val
    435             440             445
Val Glu Thr Glu Arg Glu Arg Lys Phe Asn Leu Glu Lys Ala Tyr Gly
    450             455             460
Asn Leu Glu Glu Arg Tyr Gln Ser Val Val Gln Asp Gln Glu Asp Tyr
465             470             475             480
Trp Thr Glu Gln Lys Asn Arg Glu Ala Glu Phe Arg Ala Lys Gly Thr
                485             490             495
```

381

```
Lys Val Arg Ser Met Glu Glu Val Ala Glu His Leu Gln Ile Leu Glu
            500             505             510
Asn Leu Leu Glu Asp Cys Tyr Lys Arg Leu Ser Lys Ala Glu Thr Phe
            515             520             525
Ala Leu Gly Val Glu Arg Glu Ala Thr Glu Glu Ile Glu Tyr Thr Ile
            530             535             540
Leu Ser Asp Ala Ala Asn Arg Leu Lys Val Leu Cys Glu Asp Ile Glu
545             550             555             560
Asp Thr Leu Pro Arg Val Glu Glu Ile Glu Met Met Leu Arg Met Ala
            565             570             575
Glu Arg Pro Leu His Pro Ile Lys Gln Ala Phe Thr Lys Ala Phe Val
            580             585             590
Gln Tyr Asn Arg Cys Lys Glu Arg Leu Ala Lys Val Glu Pro Tyr Tyr
            595             600             605
Lys Glu Ser Pro Ala Tyr Val Asn Ser Glu Glu Arg Leu Gln Ser Leu
            610             615             620
Asp Gln Ala Ser Gln Cys Ile Gln Arg Val Pro Lys Gly Phe Lys Phe
625             630             635             640
Arg Asn Gly Ser Met Tyr Ile
            645


        <210> 46
        <211> 167
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 46
Ile Ala Lys Ser Asp Cys Arg Val Trp Ile Arg Leu His Ser Ala Tyr
1               5               10              15
Lys Glu Ser Gln Lys Val Ser Ser Leu Glu Thr Glu Ala Cys Thr Tyr
            20              25              30
Arg Glu Tyr Leu Arg Glu Gln Val Gln Gln Phe Glu Thr Gln Gly Val
            35              40               45
Ser Leu Ile Lys Glu Glu Leu Leu Phe Leu Ser Ser Thr Leu Lys Ser
            50              55              60
Lys Leu Ser Tyr Asp Pro Leu Ile Ala Asn Ile Pro Cys Met Lys Phe
65              70              75              80
Tyr Tyr Gln Tyr Tyr Asp Asp Ile Asp Lys Ala Arg Ala Gln Ser Arg
            85              90              95
Trp Leu Glu Lys Ser Glu Arg Tyr Arg Asn Ala Lys Arg Arg Phe Gln
            100             105             110
Glu Ile Val Lys Lys Gly Leu Phe Lys Glu Ala Lys Pro Leu Lys Lys
            115             120             125
Glu Glu Tyr Arg Leu Leu Gln Glu Glu Arg Ser Asn Lys Glu Lys Arg
            130             135             140
Leu Ile Tyr Asn Lys Met Ala Val Ala Arg Gln Arg Val Gln Glu Phe
145             150             155             160
Glu Ser Met Glu Ile Pro Glu
            165


        <210> 47
        <211> 610
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 47
Cys Lys Tyr Thr Tyr His Pro Pro Gln Leu Pro Pro Asp His Ser Val
1               5               10              15
Gly Ala Thr Ser Trp Gln Pro Lys Leu Arg Ile Leu Thr Ile Thr Phe
            20              25              30
```

382

```
Leu Val Leu Gly Val Leu Leu Leu Ile Ser Gly Ala Leu Phe Leu Thr
        35                  40                  45
Leu Gly Val Pro Gly Leu Ala Ala Gly Leu Ser Phe Gly Leu Gly Ile
        50                  55                  60
Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu Phe
65                  70                  75                  80
Phe Leu Ile Arg Arg Gly Val Ser Lys Val Arg Pro Glu Glu Ile Pro
                85                  90                  95
Val Thr Pro Ser His Glu Ala Gln Lys Ile Leu Cys Gln Leu Pro Gln
            100                 105                 110
Glu Leu Asp Gln Leu Asp Thr Ser Ile Gln Glu Val Val Ser Cys Leu
            115                 120                 125
Gly Lys Leu Lys Asp Leu Lys Tyr Glu Asp Gln Gly Leu Leu Thr Glu
        130                 135                 140
Val Gln Glu Lys Leu Arg Val Phe Asp Phe Val Arg Lys Asp Met Val
145                 150                 155                 160
Thr Glu Phe Leu Glu Leu Gln Gln Val Val Ala Gln Glu Gly Gln Phe
                165                 170                 175
Leu Asp Tyr Leu Ile Asn Gln Val Gln Ser Ile Ser His Lys Leu Phe
            180                 185                 190
Val Pro Asp Val Asn Ile Gly Ala His Leu Ala Glu Leu Cys Gly Tyr
            195                 200                 205
Leu Pro Ser Gly Asp Val Arg Val Glu Arg Leu Lys Arg Ser Ala Arg
        210                 215                 220
Gln Val Val Asp Arg Phe Met Arg Val Thr Cys Asp Thr Arg Lys Val
225                 230                 235                 240
Ala Met Ala Phe Asp Glu Asn Ala Cys Gly Val Ala Lys Asn Ala Phe
                245                 250                 255
Asp Lys Ala Phe Gly Ala Leu Glu Glu Cys Val Tyr Lys Ser Leu Thr
                260                 265                 270
Glu Ser Tyr Arg Glu Ala Phe Tyr Glu Tyr Glu Lys Ala Lys Ile Leu
            275                 280                 285
Arg Asn Glu Asp Val Glu Trp Leu Gln Asp Lys Asn Lys Ser Ala Arg
        290                 295                 300
Ala Glu Gln Arg Phe Arg Glu Val Lys Asp Arg Trp Glu Asp Leu Lys
305                 310                 315                 320
Glu Thr Val Phe Trp Val Lys Glu Asn Gly Cys Ile Asp Leu Glu Val
                325                 330                 335
Leu Thr Ala Val Gly Gly Trp Pro Asp Arg Gly Pro Glu His Leu Ile
            340                 345                 350
Pro Glu Lys Arg Arg Asn Lys Val Met Ser His Lys Leu Trp Glu Ala
        355                 360                 365
Thr Met Arg Met Lys Gly Ala Glu Gly Thr Tyr Ser Val Ala Arg Val
        370                 375                 380
Ala Phe Glu Lys Asp Gly Ser Arg Lys Asn Gln Lys Lys Phe Gln Glu
385                 390                 395                 400
Lys Thr Lys Glu Trp Leu Arg Cys Leu Lys Asp Leu His Asp Gln Glu
                405                 410                 415
Cys His Arg Ala Arg Glu Arg Leu Ala Glu Leu Glu Ala Leu Tyr Pro
            420                 425                 430
Glu Val Ser Val Ser Val Val Glu Thr Glu Arg Glu Thr Lys Phe Lys
        435                 440                 445
Leu Glu Thr Ala Tyr Gly Asn Leu Glu Glu Arg Tyr Gln Ser Val Val
        450                 455                 460
Arg Asp Gln Glu Asp Tyr Trp Lys Glu Glu Glu Asn Lys Glu Ala Glu
465                 470                 475                 480
Phe Arg Glu Lys Gly Thr Lys Val Arg Ser Pro Glu Glu Val Val Glu
                485                 490                 495
Tyr Leu Gln Ile Leu Glu Asn Leu Ser Glu Asp Cys Ser Lys Gln Leu
            500                 505                 510
```

383

Thr Ile Ala Glu Val Val Val Leu Gly Val Glu Leu Glu Ala Thr Ala
         515   520   525
Glu Phe Glu Tyr Thr Ile Leu Ser Asp Ala Ala Asn Arg Leu Lys Val
         530   535   540
Leu Cys Glu Asp Ile Glu Asp Ile Leu Pro Arg Val Glu Glu Ile Glu
545   550   555   560
Ile Met Leu Arg Ile Ala Glu Leu Pro Phe Leu Pro Ile Lys Gln Ala
             565   570   575
Phe Thr Lys Ala Phe Leu Gln Tyr Asn Ser Cys Lys Asp Lys Leu Ala
             580   585   590
Lys Val Glu Pro Tyr Cys Gln Glu Ser Val Asp Tyr Lys Ser Gly Phe
         595   600   605
Arg Val
610

        <210> 48
        <211> 163
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 48
Glu Arg Phe Gln Ser Leu Asn Gln Asp Leu Gln Asn Val Tyr Gln Glu
1   5   10   15
Cys Gln Lys Ala Thr Gly Leu Glu Ser Glu Val Ser Ala Tyr Arg Asp
             20   25   30
His Leu Arg Glu Gln Ile Thr Glu Phe Glu Thr Gln Gly Leu Asp Val
         35   40   45
Ile Lys Glu Glu Leu Leu Phe Val Ser Ser Thr Leu Lys Ser Lys Leu
     50   55   60
Ser Tyr Asp Pro Leu Ile Ala Asp Ile Pro Cys Met Lys Phe Tyr Glu
65   70   75   80
Glu Tyr Tyr Asp Gly Ile Asp Lys Ala Arg Val Gln Ser Arg Trp Leu
             85   90   95
Glu Lys Ser Glu Arg Tyr Arg Lys Ala Lys Lys Gly Phe Gln Glu Met
         100   105   110
Leu Lys Glu Gly Leu Phe Lys Glu Asp Gln Ala Leu Lys Lys Ala Glu
         115   120   125
Tyr Arg Leu Leu Arg Glu Lys Arg Met Asn Lys Glu Lys Leu Leu Ile
     130   135   140
Cys Asn Lys Ile Glu Ala Ala Gln Gln Arg Val Gln Glu Phe Gly Pro
145   150   155   160
Ser Asp Ser

        <210> 49
        <211> 72
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 49
Glu His Phe His Leu Lys Val Thr Ile Val Gly Phe Phe Arg Phe Val
1   5   10   15
Leu Glu Gly Ile Leu Thr Met Tyr His Phe Gln Lys Ile Arg Met Thr
             20   25   30
Leu Thr Thr Gln Gly Phe Val Leu Asn Lys Ser Leu Arg Lys Asp Tyr
         35   40   45
Glu Leu Trp Phe Val Tyr Gly Ser Cys Pro Glu Ser Lys Val Lys Leu
     50   55   60
Gln Thr Ser Ser His Lys Trp Leu
65   70

384

<210> 50
<211> 705
<212> PRT
<213> Chlamydia pneumoniae

<400> 50

```
Met Lys Glu Leu Arg His Glu Ser Tyr Asn Arg Ala Leu His Lys Leu
1               5                   10                  15
Ser His Gln Trp Val Arg Tyr Phe Leu Tyr Thr Phe Val Ser Cys Ser
                20                  25                  30
Phe Ile Val Ala Ile Phe Thr Phe Ala Trp Leu Lys Val Leu Tyr Val
            35                  40                  45
Pro Glu Tyr Lys Ala Gly Glu Ile Ser Arg Ile Ser Leu Thr Ala Pro
    50                  55                  60
Met Asp Phe Ser Leu Ser Trp Ser Ala His Lys Phe Tyr Lys Arg Thr
65                  70                  75                  80
Ala His Ile Ser Glu Ala Phe Gly Lys Val Tyr His Leu Thr Leu Ser
                85                  90                  95
Pro Gly Ser Leu Leu Ser Lys Glu Gly Asn Ala Asp Glu Asn Thr Asp
                100                 105                 110
Tyr Trp Phe Lys Lys Ala Ala Asp Phe Leu Leu Ser Thr Asn Phe Val
            115                 120                 125
Asp Ser Ser Thr Gln Lys Cys Leu Lys Asp Leu Cys Ile Tyr Pro Pro
    130                 135                 140
Leu Leu Gly Lys Glu Lys Lys Thr Leu Glu Ile Asn Ile Asn Ser Asn
145                 150                 155                 160
Lys Gly Asn Val Ile Ala Gln Cys Phe Cys His Leu Lys Ile Phe Leu
                165                 170                 175
Ile Gln Glu Asn Cys Pro Gln Pro Cys Phe Asp Ala Ile Met Asp Ile
                180                 185                 190
Leu Lys Ile Ala Asn Phe Glu Val Ala Val Asp Lys Glu Met Ser Gly
            195                 200                 205
Cys Val Lys Gly Glu Leu Leu Gly Lys Arg Cys Ile Glu Lys Ile Thr
    210                 215                 220
Lys Gly Thr Pro Ile Leu Glu Lys Tyr Gln Arg Ile Asp Asp Arg Asp
225                 230                 235                 240
Ala Lys Ile Leu Lys Gln Leu Arg Ala Gln Leu Leu Ser Val His Thr
                245                 250                 255
Leu Phe Ser Cys Arg Ser Leu Trp Gly Ala Ile Phe Val Val Leu Leu
            260                 265                 270
Ile Leu Leu Trp Gly Tyr Gly Ala Leu Lys Ala Leu Cys Pro Glu Met
    275                 280                 285
Leu Lys Ser Pro Gln Arg Phe Met Leu Tyr Ile Ala Ile Leu Thr Leu
    290                 295                 300
Ser Leu Leu Trp Cys Arg Gly Thr Glu Ile Phe Cys Ala Tyr Trp Val
305                 310                 315                 320
Ser Tyr Leu Ser Tyr Pro Pro Ile Leu Pro Phe Thr Ala Val Leu Leu
                325                 330                 335
Gly Tyr Phe Leu Gly Leu Pro Ile Ala Gly Phe Ser Cys Thr Phe Leu
            340                 345                 350
Ala Leu Leu Tyr Thr Leu Gly Ser Asp Leu Trp Asn Asn Ser Trp Phe
            355                 360                 365
Leu Ser Ile Asn Leu Leu Cys Ser Trp Arg Ile Leu Val Ser Leu His
    370                 375                 380
Arg Val Ser Arg Leu Ser Ser Val Phe Trp Ala Cys Met Lys Leu Gly
385                 390                 395                 400
Gly Val Ala Met Gly Ser Leu Leu Met Phe Arg Ile Phe Thr Asn Thr
                405                 410                 415
Ile Ser Arg Glu Ala Leu Tyr Ala Asp Gly Ile Glu Ser Phe Val Tyr
    420                 425                 430
```

385

```
Ser Leu Ile Thr Ala Ile Ser Val Val Ala Leu Ile Pro Val Phe Glu
        435                 440                 445
Ala Ser Phe Gly Ala Ser Thr Asn Phe Ser Leu Leu Thr Tyr Leu Ser
        450                 455                 460
Pro Glu Asn Ala Leu Leu Lys Arg Leu Phe Lys Glu Ala Pro Gly Thr
465                 470         .          475                 480
Tyr Gln His Ser Val Leu Val Gly Ser Leu Ala Glu Ala Ala Ala Gln
                485                 490                 495
Ala Ile Gly Ala Asp Ser Leu Tyr Cys Leu Val Ala Ala His Tyr His
                500                 505                 510
Asp Ile Gly Lys Leu Ile Asn Pro Gly Phe Phe Ser Glu Asn Gln Lys
        515                 520                 525
Ile Leu Gln Gln Ser Gly His Ser Leu Ser Pro Leu Glu Cys Ala Lys
        530                 535                 540
Met Ile Met Arg His Ile Pro Glu Gly Val Asn Leu Ala Arg Gln Ala
545                 550                 555                 560
Gly Leu Pro Glu Ser Phe Ile Gln Val Ile Glu Glu His His Gly Thr
                565                 570                 575
Ser Val Ile Arg Ser Ala Tyr Tyr Ser His Met Val Glu Asn Pro Ser
                580.                585                 590
Thr Gly Ser Phe Asp Glu Glu Leu Phe Arg Tyr Ser Gly Asn Lys Pro
        595                 600                 605
Ser Ser Lys Glu Thr Thr Ile Ile Met Ile Ala Asp Ser Phe Glu Ala
        610                 615                 620
Ala Ser Arg Ser Leu Lys Asn Ala Ser Leu Pro Asp Leu Gln Arg Leu
625                 630                 635                 640
Ile Asp Gln Ile Ile Gln Gly Lys Leu Gln Asp Gly Gln Phe Ser Cys
                645                 650                 655
Ser Pro Ile Thr Leu Asp Glu Leu Ala Leu Ile Ser Lys Ser Met Val
                660                 665                 670
Gln Thr Leu Tyr Gly Ala Leu His Ser Arg Met Lys Tyr Pro Glu Ile
        675                 680                 685
Ser Tyr Gln Ile Ser Met Asp Ser Cys Pro Lys Pro Ser Ile Gly Gly
        690                 695                 700
Thr
705


        <210> 51
        <211> 182
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 51
Leu Lys Glu Lys Arg Arg Asn Ile Val Tyr Leu Leu Val Ile Tyr Gln
 1               5                 10                  15
Glu Ile Phe Trp Leu Thr Met Leu His Gln Pro Tyr Tyr Asp Lys Ile
        20                  25                  30
Leu Thr Gly Asn Thr Ile Tyr Ile Pro Gly His Thr His Lys Asp Ser
        35                  40                  45
Asn Lys Leu Phe Gln Lys Lys Ser Arg Ala Ile Trp Val Asp Glu Lys
        50                  55                  60
Pro Phe Ser Leu Asp Cys Phe Ser Asn Val Phe Leu Ile Phe Val Ser
65                  70                  75·                 80
Leu Val Pro Ile Ala Gly Leu Val Arg Ala Tyr Gln Ile Lys Lys Ser
                85                  90                  95
Leu Asp Arg Thr Thr Val Gln Ile Gly Tyr Ser Pro Ser Leu Ser Cys
        100                 105                 110
Glu Gln Lys Glu Cys Val Glu Ala Phe Val Asn Gly Tyr Gly Leu Ile
        115                 120                 125
Cys Ile Ser Ile Leu Gly Gly Leu Gly Ile Leu Val Pro Ile Leu Ile
        130                 135                 140
```

386

```
Leu Val Val Leu Ser Leu Leu Leu Leu Gly Ile Leu Met Leu Phe Ser
145             150             155             160
Leu Ser Thr Tyr Glu Ser Ile Lys Asn Tyr Ile Ser Lys His Ile Cys
            165             170             175
Trp Lys Ser Asn Ala Thr
        180


        <210> 52
        <211> 117
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 52
Val Ser Trp Phe Pro Ile Leu Gly Ile Phe Leu Ala Met Arg Tyr Ala
1               5               10              15
Lys His Gln Thr Asn Trp Asn Asp Glu Asn Val Lys Ala Asn Leu Gly
            20              25              30
Tyr Leu Pro Ser Thr Asn Cys Lys Asn Ala Leu Cys Arg Met Ser Ser
        35              40              45
Arg Leu Thr Ser Ser Ile Lys Thr Ala Gly Ile Leu Gly Gly Cys Gly
    50              55              60
Ile Leu Leu Pro Ile Phe Leu Leu Leu Leu Ala Ile Leu Leu Ile Ser
65              70              75              80
Val Leu Phe Gln Leu Ile Met Leu Pro Phe Arg Leu Cys Cys Phe Ala
            85              90              95
Leu Arg Gln Ser Val Ser Ser Asp Thr Val Thr Asn Leu Leu Leu Leu
            100             105             110
Asn Asn Thr Leu Ala
        115


        <210> 53
        <211> 105
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 53
Cys Phe Ala Tyr Leu Ile Ala Arg Asn Ile Pro Arg Met Gly Asn His
1               5               10              15
Glu Thr Tyr Ile His Pro Gly Val Leu Pro Ser Ser His Ala Gln Asp
            20              25              30
Val Ser Arg Ser Thr Val Tyr Pro Ser Arg Ser Phe Ile Met Arg Arg
        35              40              45
Met Leu Met Gly Trp Asn Phe Asn Arg Val Pro Ser Lys Ser Ser Glu
    50              55              60
Gln Leu Met Asp Gly His Arg Ile Pro Leu Ile Phe Phe Gly Lys His
65              70              75              80
His Pro Thr Ile Ser Ile Leu Asn Val Asn Arg Phe Ser Trp Leu Ser
            85              90              95
Ile Phe Tyr Asn Gly Glu Arg Gly Phe
        100             105


        <210> 54
        <211> 235
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 54
Lys Met Leu Ser Val Cys Tyr Ser Asp Pro Cys Leu Ser Asp Phe Cys
1               5               10              15
Gln Gly Lys Arg Pro Leu Arg Ile Ala Ser Arg Asn Ser Asn Leu Ala
            20              25              30
```

387

```
Lys Ala Gln Val His Glu Cys Ile Ser Leu Leu Arg Ser Trp Tyr Pro
        35                  40                  45
Lys Leu Trp Phe Gln Leu Ser Thr Thr Glu Thr Thr Gly Asp Arg Glu
    50                  55                  60
Lys Lys Ile Pro Leu His Leu Val Glu Asn Ser Tyr Phe Phe Thr Asp
65                  70                  75                  80
Gly Val Asp Ala Leu Val His Lys Gly Val Cys Asp Leu Ala Ile His
                85                  90                  95
Ser Ala Lys Asp Leu Pro Glu Thr Pro Ser Leu Pro Val Val Ala Ile
                100                 105                 110
Thr Arg Cys Leu His Pro Ala Asp Leu Leu Val Tyr Ala Asp His Tyr
            115                 120                 125
Val His Glu Pro Leu Pro Leu Ser Pro Arg Leu Gly Ser Ser Ser Leu
    130                 135                 140
Arg Arg Ser Ala Val Leu Lys Gln Leu Phe Pro Gln Gly Gln Ile Leu
145                 150                 155                 160
Asp Ile Arg Gly Thr Ile Glu Glu Arg Leu Asp Gln Leu His Arg Gly
                165                 170                 175
His Tyr Asp Ala Ile Val Leu Ala Lys Ala Ala Ser Leu Arg Leu His
            180                 185                 190
Leu His His Ala Tyr Ser Ile Glu Leu Pro Pro Pro Tyr His Ala Leu
    195                 200                 205
Gln Gly Ser Leu Ala Ile Thr Ala Lys Asp His Ala Gly Lys Trp Lys
    210                 215                 220
Gln Leu Phe Thr Pro Ile His Cys His Ser Ser
225                 230                 235


        <210> 55
        <211> 455
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 55
Ile Arg Met Ala Thr Lys Thr Lys Thr Gln Trp Thr Cys Asn Gln Cys
 1               5                  10                  15
Gly Ala Thr Ala Pro Lys Trp Leu Gly Gln Cys Pro Gly Cys His Asn
                20                  25                  30
Trp Asn Ser Leu Val Glu Glu Tyr Val Pro Gln Ala Arg Ser Gly Thr
        35                  40                  45
Ser Ser Arg Ser Ser Thr Ser Ala Ile Ala Leu Ser Ser Ile Glu Leu
    50                  55                  60
Glu Asn Glu Ser Arg Ile Phe Ile Asp His Ala Gly Trp Asp Arg Ile
65                  70                  75                  80
Leu Gly Gly Gly Val Val Arg Gly Ser Leu Thr Leu Leu Gly Gly Asp
                85                  90                  95
Pro Gly Ile Gly Lys Ser Thr Leu Leu Leu Gln Thr Ala Glu Arg Leu
                100                 105                 110
Ala Ser Gln Lys Tyr Lys Val Leu Tyr Val Cys Gly Glu Glu Ser Val
            115                 120                 125
Thr Gln Thr Ser Leu Arg Ala Lys Arg Leu Asn Ile Ser Ser Pro Leu
    130                 135                 140
Ile Tyr Leu Phe Pro Glu Thr Asn Leu Asp Asn Ile Lys Gln Gln Ile
145                 150                 155                 160
Ala Thr Leu Glu Pro Asp Ile Leu Ile Ile Asp Ser Ile Gln Ile Ile
                165                 170                 175
Phe Asn Pro Thr Leu Asn Ser Ala Pro Gly Ser Val Ala Gln Val Arg
            180                 185                 190
Glu Val Thr Tyr Glu Leu Met Gln Ile Ala Lys Ser Ala Gln Ile Thr
            195                 200                 205
Thr Phe Ile Ile Gly His Val Thr Lys Ser Gly Glu Ile Ala Gly Pro
    210                 215                 220
```

388

```
Arg Val Leu Glu His Leu Val Asp Thr Val Leu Tyr Phe Glu Gly Asn
225                 230                 235                 240
Ser His Ala Asn Tyr Arg Met Ile Arg Ser Val Lys Asn Arg Phe Gly
            245                 250                 255
Pro Thr Asn Glu Leu Leu Ile Leu Ser Met His Ala Asp Gly Leu Lys
            260                 265                 270
Glu Val Ser Asn Pro Ser Gly Leu Phe Leu Gln Glu Lys Thr Gly Pro
            275                 280                 285
Thr Thr Gly Ser Met Ile Ile Pro Ile Ile Glu Gly Ser Gly Ala Leu
        290                 295                 300
Leu Ile Glu Leu Gln Ala Leu Val Ser Ser Ser Pro Phe Ala Asn Pro
305                 310                 315                 320
Val Arg Lys Thr Ala Gly Phe Asp Pro Asn Arg Phe Ser Leu Leu Leu
            325                 330                 335
Ala Val Leu Glu Lys Arg Ala Gln Val Lys Leu Phe Thr Met Asp Val
            340                 345                 350
Phe Leu Ser Ile Thr Gly Gly Leu Lys Ile Ile Glu Pro Ala Ala Asp
            355                 360                 365
Leu Gly Ala Leu Leu Ala Val Ala Ser Ser Leu Tyr Asn Arg Leu Leu
        370                 375                 380
Pro Asn Asn Ser Ile Val Ile Gly Glu Val Gly Leu Gly Gly Glu Ile
385                 390                 395                 400
Arg His Val Ala His Leu Glu Arg Arg Ile Lys Glu Gly Lys Leu Met
            405                 410                 415
Gly Phe Glu Gly Ala Ile Leu Pro Glu Gly Gln Ile Ser Ser Leu Pro
            420                 425                 430
Lys Glu Ile Arg Glu Asn Phe Arg Leu Gln Gly Val Lys Thr Ile Lys
            435                 440                 445
Asp Ala Ile Arg Leu Leu Leu
    450                 455


        <210> 56
        <211> 259
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 56
Thr Leu Ser Phe Phe Pro Pro Ile Lys Ile Pro Asn Ser Lys Phe Lys
1               5                   10                  15
Asp Gly Ala Leu Leu Ser Met His Pro Pro Ile Asp Ile Thr Ala Ile
            20                  25                  30
Glu Ala Lys Leu Asn Phe Thr Phe Thr Gln Pro Lys Leu Leu Glu Ile
            35                  40                  45
Ala Leu Thr His Pro Ser Tyr Lys Asn Glu Ser Ala Val Gln Ile Glu
        50                  55                  60
Asp Ser Glu Arg Leu Glu Phe Leu Gly Asp Ala Val Leu Gly Leu Ile
65                  70                  75                  80
Val Thr Glu His Leu Phe Leu Leu Phe Pro Ser Met Asp Glu Gly Thr
            85                  90                  95
Leu Ser Thr Ala Arg Ala Ser Leu Val Asn Ala Lys Ala Cys Cys Arg
            100                 105                 110
Tyr Thr Thr Met Leu Gly Ile Gly Asp Tyr Leu Leu Ile Gly Lys Gly
        115                 120                 125
Glu Lys Ile Gln Ser Glu Arg Gly Arg Leu Ser Ala Tyr Ala Asn Leu
        130                 135                 140
Phe Glu Ser Ile Leu Gly Ala Val Tyr Leu Asp Gly Gly Leu Ser Pro
145                 150                 155                 160
Ala Arg Lys Leu Thr Val Pro Leu Leu Pro Pro Arg Glu Glu Ile Leu
            165                 170                 175
Pro Leu Met Ser Gly Asn Pro Lys Asn Leu Leu Gln Gln Phe Thr Gln
            180                 185                 190
```

389

```
Lys Gln Phe Arg Val Leu Pro Val Tyr Gln Ser Thr Ala Val Thr Asp
        195                 200             205
Ala Gln Gly Asn Val Ser Tyr Gln Ile Gln Val Leu Val Asn Gln Glu
        210                 215             220
Val Trp Gly Glu Gly Asn Ala Ser Ser Lys Lys Glu Ala Glu Lys Ile
225                 230             235                 240
Ala Ala Gln Gln Ala Leu Asp Thr Tyr Gly Asn Lys Asn Gln Asn Thr
                245                 250             255
Met Asp Val


        <210> 57
        <211> 165
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 57
Cys Phe Trp Ile Cys Tyr Leu Ile Arg Ile Arg Met Arg Ser Ala Leu
1               5               10              15
His Leu Gln His Leu Arg His Phe His Asn His Gly Ser Ile Leu Phe
        20              25              30
Glu Asn Leu Leu Thr Ile Lys Asp Cys Phe Leu Leu Glu Thr Lys Leu
        35              40              45
Gln Asn Phe Ile Ala Lys Ala Ser Lys Thr Ile Asp Thr Val Arg Trp
    50              55              60
Arg Glu Asn Ile Phe Arg Ser Met Pro Glu Ile Tyr Thr Val Val Arg
65              70              75                  80
Lys Arg Arg Leu Asp Phe Phe Ala Ala Glu Leu Val His Arg Pro Lys
                85              90              95
Leu Ser Leu Val Arg Asp Leu Trp Val Phe Pro Gly Glu Glu Ile Leu
            100             105             110
Glu Gly Glu Glu Asp Cys Met Leu Phe Leu Leu Leu Ser Gly Asp Arg
        115             120             125
Ala Gly Ser Gly Ile Phe Phe Thr Gly Pro Tyr Pro Ser Asp Leu Tyr
        130             135             140
Glu Leu Glu Lys Gly Thr Thr Gly Leu Leu Leu Ala Phe Ser Ser Val
145             150             155                 160
Gly Ile Pro Val Ile
                165


        <210> 58
        <211> 610
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 58
Glu Phe Leu Lys Leu Ser Leu His Arg Ile Ser Leu Met Lys Glu Val
1               5               10              15
Glu Gln Arg Ile Arg Ser Leu Tyr Asp Ala Val Thr Ala Glu Asn Ile
        20              25              30
Cys Arg Trp Leu Ser Asn Asp Cys Thr Gln Gln Asp Ala Lys Thr Ile
        35              40              45
Leu Gly Trp Leu Asp Thr Asp Pro Ala Gln Leu Glu Asp Leu Phe Gly
    50              55              60
Ala Thr Leu Thr Phe Gly Thr Gly Gly Leu Arg Ser Leu Met Gly Ile
65              70              75                  80
Gly Thr Asn Arg Ile Asn Leu Phe Thr Ile Arg Arg Thr Thr Gln Gly
                85              90              95
Leu Val Gln Val Leu Arg Ala His Leu Pro His Pro Gly Asp Pro Met
            100             105             110
```

```
Arg Val Val Val Gly Cys Asp Thr Arg His Asn Ser Ile Glu Phe Ala
        115             120             125
Gln Glu Thr Ala Lys Val Leu Ala Gly Asn Gly Cys Glu Val Phe Leu
        130             135             140
Phe Gln Tyr Pro Glu Pro Leu Ala Leu Val Ser Phe Thr Val Arg Tyr
145             150             155             160
Glu Arg Ala Ile Gly Gly Val Met Ile Thr Ala Ser His Asn Pro Pro
            165             170             175
Asn Tyr Asn Gly Tyr Lys Val Tyr Met Ala Ser Gly Gly Gln Val Leu
            180             185             190
Pro Pro Leu Asp Gln Glu Ile Val Ala Ala Cys Ser Ala Val Asn Glu
        195             200             205
Ile Leu Ser Val Pro Ser Ile Asp His Pro Asn Ile His Leu Ile Gly
        210             215             220
Lys Glu Tyr Glu Ala Leu Tyr Arg Asp Thr Leu Lys Gln Leu Gln Leu
225             230             235             240
Tyr Pro Glu Ala Asn Arg Ile Ser Gly Arg Ser Leu Ser Ile Ser Tyr
            245             250             255
Ser Pro Leu His Gly Thr Gly Ile Ser Leu Val Pro His Val Leu Lys
            260             265             270
Asp Trp Gly Phe Leu Ser Val His Leu Val Glu Lys Gln Ala Ile Gly
        275             280             285
Asp Gly Asp Phe Pro Thr Val Gln Leu Pro Asn Pro Glu Asp Pro Glu
        290             295             300
Ala Leu Thr Leu Gly Ile Glu Gln Met Leu Ala Asn Asp Asp Asp Leu
305             310             315             320
Phe Ile Ala Thr Asp Pro Asp Ala Asp Arg Val Gly Val Val Cys Leu
            325             330             335
Glu Asp Gly Gln Pro Tyr Arg Phe Asn Gly Asn Gln Met Ala Ser Leu
            340             345             350
Leu Ala Asp His Ile Leu Gly Ala Trp Ser Lys Thr Arg His Leu Gly
        355             360             365
Glu His Asp Lys Leu Val Lys Ser Leu Val Thr Thr Glu Met Leu Ser
370             375             380
Ala Ile Ala Lys His Tyr His Val Asp Leu Ile Asn Val Gly Thr Gly
385             390             395             400
Phe Lys Tyr Ile Gly Glu Lys Ile Glu Ser Trp Arg Asn Ser Thr Asn
            405             410             415
Lys Phe Val Phe Gly Ala Glu Glu Ser Tyr Gly Cys Leu Tyr Gly Thr
            420             425             430
His Val Glu Asp Lys Asp Ala Ile Ile Ala Ser Ala Leu Ile Ala Glu
        435             440             445
Ala Ala Leu Gln Gln Lys Leu Gln Gly Lys Thr Leu Cys Asp Ala Leu
        450             455             460
Leu Ser Leu Tyr Glu Thr Tyr Gly Tyr Phe Ala Asn Lys Thr Glu Ser
465             470             475             480
Val Val Phe Ser Ala Lys Thr Asp Glu Gln Glu Ile Arg Lys Lys Leu
            485             490             495
Ser His Leu Glu Glu Ile Ser Ser Ala Asn Phe Phe Ser Gly Lys Tyr
            500             505             510
Gln Val Glu Lys Phe Glu Asn Tyr Lys Gln Gly Ile Gly Phe Asn Leu
        515             520             525
Leu Ser Lys Asp Ser Tyr Ala Leu Thr Leu Pro Lys Thr Ser Met Leu
        530             535             540
Cys Tyr Tyr Phe Ser Gly Gly Gly Arg Val Ile Ile Arg Pro Ser Gly
545             550             555             560
Thr Glu Pro Lys Ile Lys Phe Tyr Phe Glu Met Ser Thr His Tyr Pro
            565             570             575
Glu Arg Val Thr Asp Lys Glu Ile Gln Lys Gln Arg Glu Ala Glu Ser
        580             585             590
```

391

```
Phe Gln His Leu Asp Asp Phe Ile Phe Asp Phe Lys Glu Lys Phe Ser
        595                 600                 605
Asn Leu
    610


        <210> 59
        <211> 214
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 59
Ile Leu Lys Arg Tyr Val Val Met Ser Phe Val Pro Tyr Ser Leu Pro
 1               5                  10                  15
Glu Leu Pro Tyr Asp Tyr Asp Ala Leu Glu Pro Val Ile Ser Ser Glu
            20                  25                  30
Ile Met Ile Leu His His Gln Lys His His Gln Ile Tyr Ile Asn Asn
        35                  40                  45
Leu Asn Ala Ala Leu Lys Arg Leu Asp Ala Ala Glu Thr Gln Gln Asn
    50                  55                  60
Leu Asn Glu Leu Ile Ala Leu Glu Pro Ala Leu Arg Phe Asn Gly Gly
65                  70                  75                  80
Gly His Ile Asn His Ser Leu Phe Trp Glu Thr Leu Ala Pro Ile Asp
                85                  90                  95
Gln Gly Gly Gly Gln Pro Pro Lys His Glu Leu Leu Ser Leu Ile Glu
            100                 105                 110
Arg Phe Trp Gly Thr Met Asp Asn Phe Leu Lys Lys Leu Ile Glu Val
        115                 120                 125
Ala Ala Gly Val Gln Gly Ser Gly Trp Ala Trp Leu Gly Phe Cys Pro
    130                 135                 140
Ala Lys Gln Glu Leu Val Leu Gln Ala Thr Ala Asn Gln Asp Pro Leu
145                 150                 155                 160
Glu Pro Leu Thr Gly Lys Leu Pro Leu Leu Gly Val Asp Val Trp Glu
                165                 170                 175
His Ala Tyr Tyr Leu Gln Tyr Lys Asn Val Arg Met Asp Tyr Leu Lys
            180                 185                 190
Ala Phe Pro Gln Ile Ile Asn Trp Gly His Ile Glu Asn Arg Phe Ser
        195                 200                 205
Glu Ile Ile Ser Ser Lys
    210


        <210> 60
        <211> 312
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 60
Ile Arg Trp Leu Val Arg Leu Phe Ser Tyr Asp Lys Pro Lys Ile Lys
 1               5                  10                  15
Val Gln Lys Ile Lys Ala Asp Gly Phe Ser Gly Trp Leu Lys Cys Asn
            20                  25                  30
His Cys His Glu Met Ile His Ala Asn Glu Leu Gly Gln Asn Tyr Asn
        35                  40                  45
Cys Cys Pro Lys Cys Ser Tyr His Tyr Arg Ile Thr Ala Ile Glu Arg
    50                  55                  60
Val Lys Leu Leu Ala Asp Lys Asp Ser Trp Arg Pro Leu Tyr Thr Asp
65                  70                  75                  80
Leu Lys Ser Gln Asp Pro Leu Glu Phe Ile Asp Thr Asp Thr Tyr Ala
                85                  90                  95
Asn Arg Leu Glu Lys Ala Arg Lys Asn Thr Thr Glu Ser Glu Gly Val
            100                 105                 110
```

392

```
Ile Val Gly Ile Cys Thr Ile Gly Leu His Pro Val Ala Leu Ala Val
        115                 120                 125
Met Asp Phe Asn Phe Met Ala Gly Ser Met Gly Ala Val Val Gly Glu
        130                 135                 140
Lys Leu Thr Arg Leu Ile Glu Glu Ala Ile Glu Thr Arg Leu Pro Val
145                     150                 155                 160
Ile Ile Val Ser Ala Ser Gly Gly Ala Arg Met Gln Glu Ser Val Phe
                165                 170                 175
Ser Leu Met Gln Met Val Lys Thr Ser Ala Ala Leu Ala Lys Leu His
            180                 185                 190
Glu Ala Gly Leu Pro Tyr Ile Ser Val Leu Thr Asn Pro Thr Ser Gly
            195                 200                 205
Gly Val Thr Ala Ser Phe Ala Ala Leu Gly Asp Ile Ile Ile Ala Glu
        210                 215                 220
Pro Lys Ala Leu Ile Cys Phe Ala Gly Pro Arg Val Val Ala Gln Val
225                 230                 235                 240
Ile Gly Glu Asp Leu Pro Glu Gly Ala Gln Lys Ser Glu Phe Leu Leu
                245                 250                 255
Glu His Gly Met Ile Asp Lys Ile Val Glu Arg Lys Glu Leu Lys Thr
            260                 265                 270
Thr Leu Gln Thr Leu Leu Asp Tyr Phe Leu Ala Gln Glu Tyr Thr Gly
            275                 280                 285
Gly Lys Ser Lys Ala Pro Arg Asp Leu Ser Lys Arg Leu Lys Glu Ile
        290                 295                 300
Phe Leu Leu Thr Asp Asp Ser Glu
305                 310
```

          <210> 61
          <211> 163
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 61
```
Ile Lys His His Thr Ala Ser Cys Asn Asp Asn Ile Ile Cys Asn Ala
  1                 5                 10                  15
Ile Leu Met Thr Val Phe Cys Glu Leu Asp Ser Gly Gly Glu Leu Pro
            20                  25                  30
Glu Tyr Thr Thr Pro Gly Ala Ala Gly Ala Asp Leu Arg Ala Asn Ile
        35                  40                  45
Glu Glu Pro Ile Ala Leu Leu Pro Gly Gln Arg Ala Leu Ile Pro Thr
    50                  55                  60
Gly Ile Lys Ala Glu Ile Pro Glu Gly Tyr Glu Leu Gln Val Arg Pro
65                  70                  75                  80
Arg Ser Gly Leu Ala Leu Lys His Gly Ile Thr Val Leu Asn Ser Pro
                85                  90                  95
Gly Thr Ile Asp Ser Asp Tyr Arg Gly Glu Ile Arg Val Ile Leu Ile
            100                 105                 110
Asn Phe Gly Asp Ser Thr Phe Ile Ile Glu Pro Lys Met Arg Ile Ala
        115                 120                 125
Gln Val Val Leu Ser Pro Val Val Gln Ala Thr Phe Val Val Lys Gln
        130                 135                 140
Glu Ser Leu Ala Glu Thr Ala Arg Gly Ser Gly Gly Phe Gly His Thr
145                 150                 155                 160
Gly Ala Ser
```

          <210> 62
          <211> 175
          <212> PRT
          <213> Chlamydia pneumoniae

<400> 62

```
Arg Lys Leu Pro Glu Glu Val Glu Val Leu Val Ile Leu Glu Gln Ala
1               5                   10                  15
Lys Met Pro Ser Tyr Cys Gln Asn Gln Gln Asp Phe Ser Leu Phe Ser
            20                  25                  30
Leu Leu Ser Pro Arg Leu Val Met Phe Leu Gly Lys His Ser Arg Asp
        35                  40                  45
Glu Ile Leu Gln Asp Leu Thr Asp Leu Val Asp Ala Ala Gly Leu Leu
    50                  55                  60
Glu Asp Lys Gln Ala Phe Phe Asp Ala Leu Val Arg Arg Glu Asn Ile
65                  70                  75                  80
Met Ser Thr Gly Ile Gly Met Gly Val Ala Ile Pro His Gly Lys Leu
                85                  90                  95
Glu Ser Cys Ser Asn Phe Phe Ile Ala Ile Gly Ile His Thr Gln Gly
            100                 105                 110
Ile Leu Trp Asp Ala Ile Asp Gly Ala Leu Val Arg Leu Val Phe Leu
        115                 120                 125
Ile Gly Gly Pro Glu Asn Ala Gln Ala Glu Tyr Leu Lys Leu Leu Ser
    130                 135                 140
Thr Leu Thr Leu Ser Leu Arg Glu Glu Ser Arg Arg Gln Gln Leu Leu
145                 150                 155                 160
Gln Val Asn Thr Ile Glu Glu Val Met Asn Val Phe Val Gly Met
                165                 170                 175
```

<210> 63
<211> 236
<212> PRT
<213> Chlamydia pneumoniae

<400> 63

```
Arg Ser His Glu Cys Ile Cys Gly Asp Val Lys Met Asp Leu Lys Leu
1               5                   10                  15
Asp Glu Val Ala Ser Leu Leu Asp Val Ser Glu His Thr Val Leu Gln
            20                  25                  30
Trp Leu Lys Glu Gly Ala Ile Pro Ser Tyr Ser Met Asn Asn Glu Tyr
        35                  40                  45
Arg Phe Ser Arg Glu Glu Ile Glu Asn Trp Leu Leu His Asn Gln Ala
    50                  55                  60
Leu Met Ile Gln Glu Arg Gly Glu Asp Lys Glu Ala Leu Lys Asp Leu
65                  70                  75                  80
Ser Leu Lys Tyr Ser Leu Tyr Lys Ala Ile His Arg Gly Gly Val Leu
                85                  90                  95
Cys Asp Val Val Val His Ser Lys Glu Glu Ala Leu Gln Tyr Ala Ser
            100                 105                 110
Lys Tyr Ile Ala Gln Lys Phe Gln Leu Asp Glu Ser Val Leu Phe Glu
        115                 120                 125
Met Leu Ser His Arg Glu Asn Leu Met Ser Thr Gly Ile Gly Glu Gly
        130                 135                 140
Ile Ala Leu Pro His Ala Lys Asp Phe Leu Ile Asn Ala Tyr Tyr Asp
145                 150                 155                 160
Ile Val Val Pro Met Phe Leu Ala Glu Pro Ile Glu Tyr Gly Ala Leu
                165                 170                 175
Asp Gly Lys Pro Val Gly Ile Leu Phe Phe Leu Phe Ala Cys Gln Asp
            180                 185                 190
Lys Ser His Leu Asn Leu Val Asn Lys Ile Val His Leu Gly Met Ser
        195                 200                 205
Leu Asn Ala Arg Ser Phe Phe Lys Asn Tyr Pro Asn Lys Asp Gln Leu
    210                 215                 220
Leu Ala Tyr Val Lys Glu Trp Glu Ser Gln Thr His
225                 230                 235
```

394

<210> 64
<211> 480
<212> PRT
<213> Chlamydia pneumoniae

<400> 64

```
Lys Lys Ser Phe Cys Cys Tyr Gly Asp Pro His Arg Leu Pro Gly Asp
 1               5                   10                  15
Cys Ser Arg Met Met Ser Ser Lys Arg Thr Ser Lys Ile Ala Val Leu
                20                  25                  30
Ser Ile Leu Leu Thr Phe Thr His Ser Ile Gly Phe Ala Asn Ala Asn
            35                  40                  45
Ser Ser Val Gly Leu Gly Thr Val Tyr Ile Thr Ser Glu Val Val Lys
        50                  55                  60
Lys Pro Gln Lys Gly Ser Glu Arg Lys Gln Ala Lys Lys Glu Pro Arg
65                  70                  75                  80
Ala Arg Lys Gly Tyr Leu Val Pro Ser Ser Arg Thr Leu Ser Ala Arg
                85                  90                  95
Ala Gln Lys Met Lys Asn Ser Ser Arg Lys Glu Ser Ser Gly Gly Cys
            100                 105                 110
Asn Glu Ile Ser Ala Asn Ser Thr Pro Arg Ser Val Lys Leu Arg Arg
            115                 120                 125
Asn Lys Arg Ala Glu Gln Lys Ala Ala Lys Gln Gly Phe Ser Ala Phe
        130                 135                 140
Ser Asn Leu Thr Leu Lys Ser Leu Leu Pro Lys Leu Pro Ser Lys Gln
145                 150                 155                 160
Lys Thr Ser Ile His Glu Arg Glu Lys Ala Thr Ser Arg Phe Val Asn
                165                 170                 175
Glu Ser Gln Leu Ser Ser Ala Arg Lys Arg Tyr Cys Thr Pro Ser Ser
            180                 185                 190
Ala Ala Pro Ser Leu Phe Leu Glu Thr Glu Ile Val Arg Ala Pro Val
            195                 200                 205
Glu Arg Thr Lys Glu Leu Gln Asp Asn Glu Ile His Ile Pro Val Val
            210                 215                 220
Gln Val Gln Thr Asn Pro Lys Glu Gln Asn Thr Lys Thr Thr Lys Gln
225                 230                 235                 240
Leu Ala Ser Gln Ala Ser Ile Gln Gln Ser Glu Gly Thr Glu Gln Ser
                245                 250                 255
Leu Arg Glu Leu Ala Gln Gly Ala Ser Leu Pro Val Leu Val Arg Ser
            260                 265                 270
Asn Pro Glu Val Ser Val Gln Arg Gln Lys Glu Glu Leu Leu Lys Glu
            275                 280                 285
Leu Val Ala Glu Arg Arg Gln Cys Lys Arg Lys Ser Val Arg Gln Ala
        290                 295                 300
Leu Glu Ala Arg Ser Leu Thr Lys Lys Val Ala Arg Gly Gly Ser Val
305                 310                 315                 320
Thr Ser Thr Leu Arg Tyr Asp Pro Glu Lys Ala Ala Glu Ile Lys Ser
                325                 330                 335
Arg Arg Asn Cys Lys Val Ser Pro Glu Ala Arg Glu Gln Lys Tyr Ser
            340                 345                 350
Ser Cys Lys Arg Asp Ala Arg Ala Asn Gly Lys Gln Asp Lys Thr Thr
            355                 360                 365
Pro Ser Glu Asp Ala Ser Gln Glu Glu Gln Gln Thr Gly Ala Gly Leu
        370                 375                 380
Val Arg Lys Thr Pro Lys Ser Gln Val Ala Ser Asn Ala Gln Asn Phe
385                 390                 395                 400
Tyr Arg Asn Ser Lys Asn Thr Asn Ile Asp Ser Tyr Leu Thr Ala Asn
                405                 410                 415
Gln Tyr Ser Cys Ser Ser Glu Glu Thr Asp Trp Pro Cys Ser Ser Cys
            420                 425                 430
```

395

Val Ser Lys Arg Arg Thr His Asn Ser Ile Ser Val Cys Thr Met Val
        435   440   445
Val Thr Val Ile Ala Met Ile Val Gly Ala Leu Ile Ile Ala Asn Ala
        450   455   460
Thr Glu Ser Gln Thr Thr Ser Asp Pro Thr Pro Pro Thr Pro Thr Pro
465   470   475   480

        <210> 65
        <211> 53
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 65
Pro Met Tyr Ala Asn Cys Lys His Asn Cys Leu Cys Leu Tyr Asp Phe
  1   5   10   15
Ser Arg His Arg Ser Pro Pro Gly Leu Pro Leu Thr Phe Thr Pro Pro
        20   25   30
Tyr Ser Phe Thr Leu Gly Ile Phe Leu Gly Arg Cys Leu Ser Thr Ser
        35   40   45
Asn Ile Val Leu Leu
  50

        <210> 66
        <211> 79
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 66
Leu Val Met Thr Lys Ile Gln Cys Ser Ala Gln Tyr Tyr Arg Ser Arg
  1   5   10   15
Pro Ala Glu Arg Ala Gln Thr Pro Pro Gln Pro Phe Leu Ala Arg Asp
        20   25   30
Arg Ala Asp Phe Trp Glu Arg His Pro Arg Phe Ser Ala Cys Cys Arg
        35   40   45
Val Leu Leu Leu Val Ala Trp Val Val Leu Ala Leu Leu Phe Leu Phe
  50   55   60
Val Met Leu Leu Pro Leu Ala Ala Gly Ser Tyr Leu Leu Ala Phe
65   70   75

        <210> 67
        <211> 590
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 67
Tyr Asp Tyr Tyr Lys Tyr Asn Met Phe Phe Lys Lys Asn Tyr Met Thr
  1   5   10   15
Asp Phe Pro Thr His Phe Lys Gly Pro Lys Leu Asn Pro Ile Lys Val
        20   25   30
Asn Pro Asn Phe Phe Glu Arg Asn Pro Lys Val Ala Arg Val Leu Gln
        35   40   45
Ile Thr Ala Val Val Leu Gly Ile Ile Ala Leu Leu Ser Gly Ile Val
        50   55   60
Leu Ile Ile Gly Thr Pro Leu Gly Ala Pro Ile Ser Met Ile Leu Gly
65   70   75   80
Gly Cys Leu Leu Ala Ser Gly Gly Ala Leu Phe Val Gly Gly Thr Ile
              85   90   95
Ala Thr Ile Leu Gln Ala Arg Asn Ser Tyr Lys Lys Ala Val Asn Gln
        100   105   110
Lys Lys Leu Ser Glu Pro Leu Met Glu Arg Pro Glu Leu Lys Ala Leu
        115   120   125

396

```
Asp Tyr Ser Leu Asp Leu Lys Glu Val Trp Asp Leu His His Ser Val
130               135               140
Val Lys His Leu Lys Lys Leu Asp Leu Asn Leu Ser Lys Thr Gln Arg
145           150               155               160
Glu Val Leu Asn Gln Ile Lys Ile Asp Asp Glu Gly Pro Ser Leu Gly
            165               170               175
Glu Cys Ala Ala Met Ile Ser Glu Asn Tyr Asp Ala Cys Leu Lys Met
            180               185               190
Leu Ala Tyr Arg Glu Glu Leu Leu Lys Glu Gln Thr Gln Tyr Gln Glu
        195               200               205
Thr Arg Phe Asn Gln Asn Leu Thr His Arg Asn Lys Val Leu Leu Ser
    210               215               220
Ile Leu Ser Arg Ile Thr Asp Asn Ile Ser Lys Ala Gly Gly Val Phe
225               230               235               240
Ser Leu Lys Phe Ser Thr Leu Ser Ser Arg Met Ser Arg Ile His Thr
            245               250               255
Thr Thr Thr Val Ile Leu Ala Leu Ser Ala Val Val Ser Val Met Val
            260               265               270
Val Ala Ala Leu Ile Pro Gly Gly Ile Leu Ala Leu Pro Ile Leu Leu
        275               280               285
Ala Val Ala Ile Ser Ala Gly Val Ile Val Thr Gly Leu Ser Tyr Leu
        290               295               300
Val Arg Gln Ile Leu Ser Asn Thr Lys Arg Asn Arg Gln Asp Phe Tyr
305               310               315               320
Lys Asp Phe Val Lys Asn Val Asp Ile Glu Leu Leu Asn Gln Thr Val
            325               330               335
Thr Leu Gln Arg Phe Leu Phe Glu Met Leu Lys Gly Val Leu Lys Glu
            340               345               350
Glu Glu Glu Val Ser Leu Glu Gly Gln Asp Trp Tyr Thr Gln Tyr Ile
        355               360               365
Thr Asn Ala Pro Ile Glu Lys Arg Leu Ile Glu Glu Ile Arg Val Thr
    370               375               380
Tyr Lys Glu Ile Asp Ala Gln Thr Lys Lys Met Lys Thr Asp Leu Glu
385               390               395               400
Phe Leu Glu Asn Glu Val Arg Ser Gly Arg Leu Ser Val Ala Ser Pro
            405               410               415
Ser Glu Asp Pro Ser Glu Thr Pro Ile Phe Thr Gln Gly Lys Glu Phe
        420               425               430
Ala Lys Leu Arg Arg Gln Thr Ser Gln Asn Ile Ser Thr Ile Tyr Gly
        435               440               445
Pro Asp Asn Glu Asn Ile Asp Pro Glu Phe Ser Leu Pro Trp Met Pro
    450               455               460
Lys Lys Glu Glu Glu Ile Asp His Ser Leu Glu Pro Val Thr Lys Leu
465               470               475               480
Glu Pro Gly Ser Arg Glu Glu Leu Leu Leu Val Glu Gly Val Asn Pro
            485               490               495
Thr Leu Arg Glu Leu Asn Met Arg Ile Ala Leu Leu Gln Gln Gln Leu
        500               505               510
Ser Ser Val Arg Lys Trp Arg His Pro Arg Gly Glu His Tyr Gly Asn
        515               520               525
Val Ile Tyr Ser Asp Thr Glu Leu Asp Arg Ile Gln Met Leu Glu Gly
    530               535               540
Ala Phe Tyr Asn His Leu Arg Glu Ala Gln Glu Glu Ile Thr Gln Ser
545               550               555               560
Leu Gly Asp Leu Val Asp Ile Gln Asn Arg Ile Leu Gly Ile Ile Val
            565               570               575
Glu Gly Asp Ser Asp Ser Arg Thr Glu Glu Glu Pro Gln Glu
        580               585               590
```

397

<210> 68
<211> 580
<212> PRT
<213> Chlamydia pneumoniae

<400> 68
Gly Val Tyr Met Ala Asn Pro Thr Gln Ser Arg Pro Pro Ser Pro Glu
1   5   10   15
Ile Ser Ile Glu Glu Leu Glu Leu Gln Glu Leu Ala Gly Ser Ser Asn
            20   25   30
Thr Glu Thr Ile Ser Asn Thr Pro Pro Pro Ser Cys Ala Ala Thr Ala
        35   40   45
Glu Glu Val Ser Leu Phe Ile Glu Gly Gly Arg Arg Asn Ser Glu Asp
    50   55   60
Glu Glu Gly Pro Leu Gly Ser Cys Glu Val Tyr Asp Val Val Cys Ile
65   70   75   80
Thr Asn Gln Gly Asp Pro Glu Val Arg Asp His Glu Val Arg Val Met
                85   90   95
Tyr Ile Asn Gly Ser Gly Arg Thr Gln His Glu Gly Ile Leu Asp Ala
            100   105   110
Met Asn Ile Cys Asp Leu Arg Gly Glu Pro Val Arg Phe Ile His Asn
        115   120   125
Ser Gly Tyr Gly Leu Gly Ser Cys Phe Leu Gly Ile Arg Asn Arg Ile
    130   135   140
Pro Pro Arg Asp Asn Val Ile Ser Gln Ala Ile Gln Ala Arg Trp Asn
145   150   155   160
Glu Phe Phe Ile Phe Ala Glu Asn Ala Asn Arg Asp Tyr Ile Val Leu
                165   170   175
Phe Ser Gly Asn Gly Gly Leu Tyr Leu Gln Val Ala Leu Asp Asn Ser
            180   185   190
Ile Tyr Ser His His Ile Leu Cys Val Gly Ile Gly Ser Ser Tyr Tyr
        195   200   205
Ile Gln Gly Asn Tyr Arg Val His Asn Tyr Arg Val Thr Gly Asp Trp
    210   215   220
Thr Thr Leu Leu Asp Arg Arg Gly Ala Thr Ala Val Asn Thr Thr Thr
225   230   235   240
Leu Pro Tyr Ala Asp Ser Ala Glu Gly Leu Phe Leu Pro Ser Val Arg
                245   250   255
Cys Pro Ser Tyr Gln Trp Ala Leu Arg Cys Gly Glu Gln Cys Leu Ile
            260   265   270
Met Asp Asn Asn Gln Gln Val Gly Phe Arg Pro Gln Asp Ser Ser Ser
        275   280   285
Glu Ile Ala Leu Val Val Asn Leu Asn Gln Asp His Ser Thr Trp Thr
    290   295   300
Arg Leu Ile Glu Trp Ile Asp Arg Gly Asp Ser Gln Ala Val Leu Glu
305   310   315   320
Leu Asn Pro Gln Pro Ser His Cys Arg Asp Ile Ala Leu Thr Ala Leu
                325   330   335
Tyr Ala Thr Thr Arg Ile Ser Ser Leu Leu Gln Glu Cys Leu Met Ile
            340   345   350
Ser Val Thr Tyr Ala Pro Glu Val Phe Val Thr Tyr Ala Ile Val Thr
        355   360   365
Gly Tyr Ser Ile Met Thr Leu Arg Tyr Phe Ile Leu Leu Leu Thr Asn
    370   375   380
Arg Pro Gly Cys Arg Arg His Phe Arg Val Leu Arg Leu Ala Ala Leu
385   390   395   400
Gly Leu Gln Ser Leu Gly Phe Leu Thr Val Leu Leu Asp His Ile Asn
                405   410   415
Val Thr Arg Arg Val Asn Arg Arg Pro Pro Leu Ile Ser Val Ile Phe
            420   425   430

398

```
Cys Thr Ala Ser Phe Ala Thr Gly Ser Phe Ile Tyr Val Asp Leu Thr
        435             440             445
Arg Met Phe Phe Thr Ser Leu Arg Ser Arg Leu Gln Leu Phe Val Gln
    450             455             460
Arg Arg Leu Thr Gly Arg Gly Leu Pro Leu Arg Arg Val Phe Val Asn
465             470             475             480
His Leu Asp Ser Leu Arg Phe Ser Gln Asn Ala Leu Ile Thr Phe His
                485             490             495
Gly Gly Leu Phe Met Pro Leu Ile Ile Gly Phe Phe Asn Gln Leu Val
            500             505             510
Ile Gln Val Pro Arg Val Val Ile Arg Pro Asn Thr Thr Ala Val Tyr
        515             520             525
Asp Leu Asn Gln Thr Ser Gln Glu Ala Trp Asp Ser Gly Asp Val Leu
    530             535             540
Ala Ile Gly Gln Thr Ile Asn Phe Leu Leu Cys Met Ile Leu Leu Val
545             550             555             560
Ile Asn Thr Phe Phe Phe Val Arg Ser Val Arg Arg Asn Leu His Arg
                565             570             575
Arg Pro His Arg
            580


        <210> 69
        <211> 378
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 69
Lys Gly Ser Gly Tyr Ser Tyr Arg Gly Pro Pro Met Ala Val Glu Gly
1           5           10          Met Ala Val 15
Arg Val Asn Ser Ser Gln Ala Leu Asn Gln Asp Cys Gln Glu Val Leu
            20          25          30
Ala Asn Lys Gln Ser Lys Gly Leu Leu Arg Cys Arg Ile Leu Ser Ile
        35          40          45
Val Val Ala Val Ile Thr Phe Ile Ala Gly Val Val Leu Ile Ala Leu
    50          55          60
Thr Leu Ala Ser Ile Leu Thr Ser Val Pro Tyr Leu Ala Leu Gly Val
65          70          75          80
Phe Leu Leu Ile Val Thr Leu Gly Cys Ile Ile Phe Ala Leu Cys Ser
            85          90          95
Glu Lys Ile Lys Lys Val Pro Pro Thr Pro Ile Ser His Lys Glu Glu
        100         105         110
Ile Ile Ala Trp Phe Glu Glu Arg Lys Asn Ile Asp Met Glu Lys Glu
        115         120         125
Lys Glu Asp Pro Glu His Phe Gly Arg Thr Ala Thr Asp Ile Pro Met
    130         135         140
Arg Ser Ala Leu Asp Gln Phe Asn His Ser Cys His His Ile His Glu
145         150         155         160
Ser Pro Ala Leu Thr Glu Thr Tyr Arg Ser His Gln Asp Val Leu Leu
            165         170         175
Phe Lys Asp Trp Cys Pro Val Thr Leu Pro Asp Val Thr Ser Glu Glu
        180         185         190
Glu Val Leu Ile Arg Ser Val Val Gly Ser Tyr Leu Leu Met Glu Ala
        195         200         205
Cys Val Pro Lys Val Ser Met Leu Ile Asp Glu Leu His Asn Lys Leu
    210         215         220
Lys Ser Pro Ser Glu Arg Glu Cys Leu Phe Ile Asp Lys Lys Thr Leu
225         230         235         240
Gln Arg Lys Ala Ser Phe Leu Phe Thr Gln Lys Asp Leu Ala Thr Phe
            245         250         255
Phe Leu Ala Tyr Thr Arg Val Asn Asp Gly His Leu Ala Pro Phe Arg
        260         265         270
```

```
Ala Gly Ala Lys Trp Ile Leu Ile His Tyr Val Arg Leu Arg Arg Gln
        275                 280                 285
His Asn Gln Asn Asp Phe Phe Thr Pro Gly His Ser Cys Tyr Tyr Ala
        290             295                 300
Arg Leu Ala Phe Asn Gln Thr Gln Arg Leu Tyr His Gln Leu Phe Asn
305                 310                 315                 320
Val Glu Lys Leu Arg Ser Ile Tyr Ala Asn Met Asp Lys Asp Pro Leu
                325                 330                 335
Cys His Pro Trp Ala Phe Ile Pro Ile Tyr Asp Leu Leu Lys Thr Glu
                340                 345                 350
Asp His Gly Asp Gly Phe Leu Glu Gln Gln Glu Asp Arg Glu Tyr Pro
            355             360                 365
Ser Arg Ala Ala Gln Asp Gln Phe Trp Gly
370                 375
```

```
        <210> 70
        <211> 193
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 70
Ser Phe Met Ile Lys Lys Phe Phe Ile Tyr Ser Leu Ile Phe Ser Cys
1               5                   10                  15
Ser Phe Ser Ala Pro Leu Lys Gly Ile Cys Asn Glu Asp Val Ser Ser
            20                  25                  30
Gln Ser Arg Ile Glu Glu Asp Pro Glu Val Leu Ile Thr Gln Leu Asn
        35                  40                  45
Glu Leu Ile Glu Thr Pro Ile Glu Glu Gly Lys Glu Ile Arg Asn Glu
    50                  55                  60
Leu Gln Ala Ile Ser Asp Gly Gln Lys Ser Ser Glu Glu Ile Glu Glu
65                  70                  75                  80
Ser Cys Gly Thr Ser Asp Ser Glu Gly Leu Ser Glu Lys Thr Asp Lys
                85                  90                  95
Glu Ser Ser Asn Glu Tyr Val Leu Asp Phe Phe Asp Ser Met Val Gln
            100                 105                 110
Arg Leu Glu Gly Ile Ser Lys Met Cys Gln Ser Gly Gln Val Ala Gln
        115                 120                 125
Ile Ile Asp Cys Phe Asn Arg Glu Phe Asp Ile Arg Asn Arg Glu Leu
        130                 135                 140
Glu Leu Lys Asn Arg Glu Leu Glu Leu Arg Glu Lys Asp Leu Glu Phe
145                 150                 155                 160
Lys Lys Ser Ile Leu Asp Trp Asn Lys Glu Lys Val Ser Arg Glu Leu
                165                 170                 175
Ala Phe Gln Arg Glu Gln Asp Ile Lys Gln Thr Leu Met Leu Leu Lys
            180                 185                 190
Lys
```

```
        <210> 71
        <211> 632
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 71
Leu Asn Phe Leu Tyr Val Tyr Leu Leu Ile Phe Asn Leu Gly Ile Met
1               5                   10                  15
Thr Thr Pro Pro Pro Ser Arg Ser Ser Ser Pro Pro Pro Tyr Asp Trp
            20                  25                  30
Ile Glu Leu Gln Asp Leu Gly Asn Thr Asn Asn Asn Ser Ser Arg Ala
        35                  40                  45
```

400

```
Thr Pro Pro Pro Pro Glu Val Gly Gly Glu Leu Pro Pro Tyr Phe Ser
    50              55              60
Ala Ser Asn Phe Val Val Ile Glu Arg Gly Ala Pro Ser Leu Pro Ser
65              70              75              80
Pro Gln Gln Leu Leu Ser Leu Pro Glu Tyr Ser Arg Gln Pro Pro Pro
            85              90              95
Gly Tyr Phe Asp Glu Thr Ala Ser Ile Thr Ser Arg Thr Ser Glu Glu
            100             105             110
Met Phe Gly Thr Leu Val Ser Thr Leu Cys Cys Pro Ala Asn Ser Glu
            115             120             125
Arg Asp Trp Glu Asp His Glu Val Asn Cys Ile Tyr Ile Ala Ser Thr
    130             135             140
Ser Asp Thr Gln Leu Glu Ala Val Gln Gly Gly Met His Ile Thr Glu
145             150             155             160
Leu Arg Gly Glu Pro Val Arg Val Leu Tyr Glu Thr Gly His Leu Tyr
            165             170             175
Ala Phe Ala Arg Glu Asn Thr Cys His Ser Arg Leu Glu Val Ser His
            180             185             190
Thr Val Arg Ala Met Thr Tyr Phe Trp Asp Arg Phe Phe Ser Arg His
    195             200             205
Trp Asn Val Gly Arg Arg Phe Leu Val Phe Tyr Gln Gly Asn Gly Gly
    210             215             220
Ala Tyr Val Gln Ala Ala Leu Asp Ser Ser Met His Thr Gln Asp Ile
225             230             235             240
Tyr Val Leu Gly Leu Ser Pro Thr Val Tyr Ile Arg Gly Asn Tyr His
            245             250             255
Val Gln His Tyr Arg Val Arg Gly Phe Trp Pro Ser Cys Leu Asp Ser
            260             265             270
Leu Ala Ala Cys Ala Glu Asn Thr Ser Val Leu Pro Tyr Gly Glu Ser
    275             280             285
Ser Asp Gly Ile Phe Tyr Pro Ser Leu Phe Ser His Thr Phe Asp Asn
    290             295             300
Ala Ile Arg Tyr Gly Glu Arg Cys Leu Leu Val Cys Ser Glu Gly Met
305             310             315             320
Gly Met Leu Pro Glu Thr Gln Gln Gln Thr Ser Pro Leu Thr Ser Leu
            325             330             335
Glu Gly Gly His Glu Val Ala Leu Val Leu Asn Pro Gln Gln Asn Pro
            340             345             350
Glu Ala Leu Ser Ile Ala Ser Arg Leu Met His Glu Glu Arg Gly Gly
    355             360             365
Arg Leu Glu Ser Asn Tyr Met Pro Gly Arg Ser Ser Asn Pro Phe Met
    370             375             380
Thr Ser Met Tyr Val Leu Val Arg Leu Asn Thr Leu Ala Gln Ile Tyr
385             390             395             400
Leu Met Ser Pro Tyr Tyr Ser Phe Gln Ser Asn Asp Ile Val Cys Leu
            405             410             415
Ile Phe Ile Ser Ser Ala Ala Val Glu Thr Val Ser Tyr Ile Phe Leu
            420             425             430
Thr Val Thr Asp Ser Thr Cys Gly Arg Arg Tyr Leu Arg Val Pro Arg
    435             440             445
Leu Val Cys Thr Gly Leu Arg Asn Leu Ala Leu Pro Thr Thr Leu Leu
    450             455             460
Glu Leu Leu Ile Leu Ser Tyr Pro Arg Ser Val Glu Gly Val Pro Phe
465             470             475             480
Asn Val Arg Phe Ile Leu Gly Tyr Met Cys Thr Thr Arg Val Val Phe
            485             490             495
Phe Ala Trp Asn Leu Ile Leu His Trp Pro Phe Arg Cys Leu Arg His
            500             505             510
Gly Ile Gln Leu Phe Val His Arg Ser Ile Ile Gly His Thr Leu Gly
    515             520             525
```

401

Ala Arg Ile Thr Asp Leu Thr Leu Ala Ser Met Arg Tyr Ala Ile Val
530   535   540
Phe Pro Ser Ile Val Ser Ser Cys Leu Leu Thr Ala Leu Ala His Ala
545   550   555   560
Asn Thr Asn Ile Leu Ala Leu Asp Pro Tyr Arg Leu Ile Glu Ser Gly
                565   570   575
Asp Leu Arg Arg Pro Ala Phe Asn Asp Asp Glu Met Gln Gln Ala Asp
            580   585   590
Asn Pro Trp Asp Ala Tyr Ser Ile Gly Leu Val Ile Asn Thr Cys Ile
        595   600   605
Tyr Met Leu Ile Leu Phe Ala Asn Leu Ile Phe Met Val Tyr Ser Val
    610   615   620
Arg Arg Tyr His Arg Ser Arg Arg
625   630

        <210> 72
        <211> 64
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 72
Tyr Lys Val Gly Leu Phe His Leu Lys Asn Gln Asn Phe Phe Ser Asn
1   5   10   15
Gln Ser Arg Thr Tyr Glu Gln Arg Phe Pro Lys Val Ser Pro His Phe
            20   25   30
Glu Ser Ile Leu Arg Leu Gln Ser Val Gly Phe Ser Ser Gln Gly Thr
        35   40   45
Leu Leu Ile Ser Phe Arg Asp Thr Glu Leu Lys Arg Asp Leu Tyr Ile
    50   55   60

        <210> 73
        <211> 156
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 73
Ile Lys Ser Leu Arg Ser Ile Leu Glu Phe Ile Cys Pro Leu Gln His
1   5   10   15
Ala Arg Cys Leu Lys Lys Gln His Lys Ile Ile Glu Glu Leu Phe Pro
            20   25   30
Glu Pro Phe Gln Lys Asp His Leu Tyr Leu Lys Leu Met Glu Asn Ser
        35   40   45
Ser Ser Arg Asp Ala Phe Asp Lys Lys Arg Met Leu Lys Glu Asn Leu
    50   55   60
Val Val Gly Cys Gln Ser Asp Leu Tyr Leu Tyr Glu Val Tyr Gln Asp
65   70   75   80
Gly Ile Leu Phe Phe Phe Thr Tyr Thr Lys Ala Leu Met Ser Ser Gly
                85   90   95
Ile Ala Ser Leu Phe Thr Glu Val Tyr Ser Gly Glu Thr Pro Ser Thr
        100   105   110
Ile Leu Thr Cys Lys Pro Ile Phe Phe Gln Arg Leu Thr Pro Tyr Leu
        115   120   125
Ser Phe Gly Arg Leu Asn Gly Gly Glu Ser Leu Tyr Met Arg Met Lys
    130   135   140
Gln Ile Ala Val Gln Tyr Leu Lys Pro Pro Gln Thr
145   150   155

        <210> 74
        <211> 365
        <212> PRT
        <213> Chlamydia pneumoniae

                                402

<400> 74

```
Arg Gly Tyr Arg Ser Thr Lys Thr Ser Val Tyr Lys Glu Lys Val Leu
1               5                   10                  15
Ile Leu Ile Tyr Cys Leu Leu Phe Tyr Phe Phe His Tyr Arg Met Ser
            20                  25                  30
Thr Pro Leu Ser Ser Gly Gly Ile Ser Pro Ser Asp Gln Tyr Val Pro
            35                  40                  45
Gln Glu Leu Phe Cys Asp Arg Leu Ser Ser Ser Arg Ser Asn Ser Pro
        50                  55                  60
Asp Ser Asn Ala Ser Gly Asp Ser Pro Ile Val Ser Pro Pro Ile Ser
65                  70                  75                  80
Ala Leu Val Ala Leu Thr Asp Leu Lys Leu Val Pro Tyr Asn Gln Asn
                85                  90                  95
Ser Phe Ser Trp Thr Thr Arg Leu Lys Asn Ala Val Glu Lys Ile Gly
            100                 105                 110
Leu Phe Leu Gln Arg Asn Trp Lys Tyr Ile Leu Leu Tyr Ile Leu Ala
        115                 120                 125
Trp Ala Leu Ile Leu Val Cys His His Thr Val Ala Leu Thr Leu Thr
        130                 135                 140
Ile Trp Leu Gly Val Gly Leu Gly Ile Gly Val Val Phe Gly Ile Phe
145                 150                 155                 160
Thr Ala Thr Cys Leu Asp Lys Glu Asn Lys His Arg His Val Asn Ser
                165                 170                 175
Leu Trp Asn Leu Ile Asn His Gly Ile Leu Gln Leu Asp Pro Asn Gly
            180                 185                 190
Thr Arg Gln Ile Leu Leu Ala Thr Met Ile Ala Ser Ile Ser Ala Leu
        195                 200                 205
Ile Tyr Ala Val Pro Gln Ala Val Gly Leu Val Ile Gly Phe Ser Ile
210                 215                 220
Gly Asn Gln Leu Ser Ile Asn Thr Val Tyr Gly Ala Arg Leu Gly Asp
225                 230                 235                 240
Glu Ala Thr Tyr Ala Ile Asp Arg Lys Ala His Lys Lys Arg Ile Glu
                245                 250                 255
Asn Ile Glu Gln Ala Ile Asn Gln His Gln Ile Ile Lys His Gln Met
            260                 265                 270
Ile Asn Gln Lys Gln Leu Asn Ala Leu Ile Glu Ile Asn Arg Asn Asn
        275                 280                 285
Gln Thr Asp Pro Ala Thr Ala Asn Leu Leu Ala Ser Leu Lys Leu Asn
290                 295                 300
Leu Asn Gln Pro Met Pro Tyr Cys Phe Ser Met Pro Glu Cys Gly Val
305                 310                 315                 320
Thr Ser Ser Tyr Leu Asp Leu Asn Asn Asn Ser Pro Asp Asp Ile Ile
            325                 330                 335
Ala Arg Ala Asp Gln Cys Ile Met Thr Leu Ser Gln Thr Leu Gln Gln
            340                 345                 350
Ile Lys Lys Glu Pro Asp Arg Ile Ile Glu Ser Asn His
355                 360                 365
```

<210> 75
<211> 74
<212> PRT
<213> Chlamydia pneumoniae

<400> 75

```
Ser Met Ala Lys Lys Glu Asp Thr Leu Val Leu Glu Gly Lys Val Glu
1               5                   10                  15
Glu Leu Leu Pro Gly Met His Phe Arg Val Ile Leu Glu Asn Gly Met
            20                  25                  30
Pro Val Thr Ala His Leu Cys Gly Lys Met Arg Met Ser Asn Ile Arg
            35                  40                  45
```

Leu Leu Val Gly Asp Arg Val Thr Val Glu Met Ser Ala Tyr Asp Leu
50   55   60
Thr Lys Ala Arg Val Val Tyr Arg His Arg
65   70

<210> 76
<211> 398
<212> PRT
<213> Chlamydia pneumoniae

<400> 76
Glu Asp Phe Glu Met Ser Lys Glu Thr Phe Gln Arg Asn Lys Pro His
1   5   10   15
Ile Asn Ile Gly Thr Ile Gly His Val Asp His Gly Lys Thr Thr Leu
20   25   30
Thr Ala Ala Ile Thr Arg Ala Leu Ser Gly Asp Gly Leu Ala Ser Phe
35   40   45
Arg Asp Tyr Ser Ser Ile Asp Asn Thr Pro Glu Glu Lys Ala Arg Gly
50   55   60
Ile Thr Ile Asn Ala Ser His Val Glu Tyr Glu Thr Pro Asn Arg His
65   70   75   80
Tyr Ala His Val Asp Cys Pro Gly His Ala Asp Tyr Val Lys Asn Met
85   90   95
Ile Thr Gly Ala Ala Gln Met Asp Gly Ala Ile Leu Val Val Ser Ala
100   105   110
Thr Asp Gly Ala Met Pro Gln Thr Lys Glu His Ile Leu Leu Ala Arg
115   120   125
Gln Val Gly Val Pro Tyr Ile Val Val Phe Leu Asn Lys Val Asp Met
130   135   140
Ile Ser Gln Glu Asp Ala Glu Leu Ile Asp Leu Val Glu Met Glu Leu
145   150   155   160
Ser Glu Leu Leu Glu Glu Lys Gly Tyr Lys Gly Cys Pro Ile Ile Arg
165   170   175
Gly Ser Ala Leu Lys Ala Leu Glu Gly Asp Ala Asn Tyr Ile Glu Lys
180   185   190
Val Arg Glu Leu Met Gln Ala Val Asp Asp Asn Ile Pro Thr Pro Glu
195   200   205
Arg Glu Ile Asp Lys Pro Phe Leu Met Pro Ile Glu Asp Val Phe Ser
210   215   220
Ile Ser Gly Arg Gly Thr Val Val Thr Gly Arg Ile Glu Arg Gly Ile
225   230   235   240
Val Lys Val Ser Asp Lys Val Gln Leu Val Gly Leu Gly Glu Thr Lys
245   250   255
Glu Thr Ile Val Thr Gly Val Glu Met Phe Arg Lys Glu Leu Pro Glu
260   265   270
Gly Arg Ala Gly Glu Asn Val Gly Leu Leu Leu Arg Gly Ile Gly Lys
275   280   285
Asn Asp Val Glu Arg Gly Met Val Val Cys Gln Pro Asn Ser Val Lys
290   295   300
Pro His Thr Lys Phe Lys Ser Ala Val Tyr Val Leu Gln Lys Glu Glu
305   310   315   320
Gly Gly Arg His Lys Pro Phe Phe Ser Gly Tyr Arg Pro Gln Phe Phe
325   330   335
Phe Arg Thr Thr Asp Val Thr Gly Val Val Thr Leu Pro Glu Gly Thr
340   345   350
Glu Met Val Met Pro Gly Asp Asn Val Glu Leu Asp Val Glu Leu Ile
355   360   365
Gly Thr Val Ala Leu Glu Glu Gly Met Arg Phe Ala Ile Arg Glu Gly
370   375   380
Gly Arg Thr Ile Gly Ala Gly Thr Ile Ser Lys Ile Asn Ala
385   390   395

404

<210> 77
<211> 88
<212> PRT
<213> Chlamydia pneumoniae

<400> 77
Ser Arg Ser Trp Phe Met Lys Gln Gln His Asn Arg Lys Ala Leu Ser
1   5   10   15
Arg Lys Ile Gly Thr Val Lys Lys Gln Ala Lys Phe Ala Gly Ser Phe
            20   25   30
Leu Asp Glu Ile Lys Lys Ile Glu Trp Val Ser Lys His Asp Leu Lys
        35   40   45
Lys Tyr Ile Lys Val Val Leu Ile Ser Ile Phe Gly Phe Gly Phe Ala
    50   55   60
Ile Tyr Phe Val Asp Leu Val Leu Arg Lys Ser Ile Thr Cys Leu Asp
65   70   75   80
Gly Ile Thr Thr Phe Leu Phe Gly
                85

<210> 78
<211> 190
<212> PRT
<213> Chlamydia pneumoniae

<400> 78
Gln Pro Phe Cys Ser Val Asn Cys Met Tyr Lys Trp Tyr Val Val Gln
1   5   10   15
Val Phe Thr Ala Gln Glu Lys Lys Val Lys Lys Ala Leu Glu Asp Phe
            20   25   30
Lys Glu Ser Ser Gly Met Thr Asp Phe Ile Gln Glu Ile Ile Leu Pro
        35   40   45
Ile Glu Asn Val Met Glu Val Lys Lys Gly Glu His Lys Val Val Glu
    50   55   60
Lys Tyr Ile Trp Pro Gly Tyr Leu Leu Val Lys Met His Leu Thr Asp
65   70   75   80
Glu Ser Trp Leu Tyr Val Lys Ser Thr Ala Gly Ile Val Glu Phe Leu
                85   90   95
Gly Gly Gly Val Pro Val Ala Leu Ser Glu Asp Glu Val Arg Ser Ile
            100   105   110
Leu Thr Asp Ile Glu Glu Lys Lys Ser Gly Val Val Gln Lys His Gln
        115   120   125
Phe Glu Val Gly Ser Arg Val Lys Ile Asn Asp Gly Val Phe Val Asn
    130   135   140
Phe Ile Gly Met Val Ser Glu Val Phe His Asp Lys Gly Arg Leu Ser
145   150   155   160
Val Met Val Ser Ile Phe Gly Arg Glu Thr Arg Val Asp Asp Leu Glu
                165   170   175
Phe Trp Gln Val Glu Glu Val Ala Pro Gly Gln Glu Ser Glu
                180   185   190

<210> 79
<211> 160
<212> PRT
<213> Chlamydia pneumoniae

<400> 79
Phe Phe Val Ser Tyr Pro Leu Phe Val Glu Val Ser Gln Cys Lys Val
1   5   10   15
Arg Phe Ser Met Ser Val Lys Lys Val Ile Lys Ile Ile Lys Leu Gln
            20   25   30

405

Ile Pro Gly Gly Lys Ala Asn Pro Ala Pro Pro Ile Gly Pro Ala Leu
         35   40   45
Gly Ala Ala Gly Val Asn Ile Met Gly Phe Cys Lys Glu Phe Asn Ala
    50   55   60
Ala Thr Gln Asp Lys Pro Gly Asp Leu Leu Pro Val Val Ile Thr Val
65   70   75   80
Tyr Ala Asp Lys Thr Phe Thr Phe Ile Thr Lys Gln Pro Pro Val Ser
             85   90   95
Ser Leu Ile Lys Lys Thr Leu Asn Leu Glu Ser Gly Ser Lys Ile Pro
            100   105   110
Asn Arg Asn Lys Val Gly Lys Leu Thr Gln Ala Gln Val Glu Ala Ile
            115   120   125
Ala Glu Gln Lys Met Lys Asp Met Asp Ile Val Leu Leu Glu Ser Ala
    130   135   140
Lys Arg Met Val Glu Gly Thr Ala Arg Ser Met Gly Ile Asp Val Glu
145   150   155   160

        <210> 80
        <211> 236
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 80
Ser Cys Arg Ile Met Thr Lys His Gly Lys Arg Ile Arg Gly Ile Leu
1   5   10   15
Lys Asn Tyr Asp Phe Ser Lys Ser Tyr Ser Leu Arg Glu Ala Ile Asp
        20   25   30
Ile Leu Lys Gln Cys Pro Pro Val Arg Phe Asp Gln Thr Val Asp Val
        35   40   45
Ser Ile Lys Leu Gly Ile Asp Pro Lys Lys Ser Asp Gln Gln Ile Arg
    50   55   60
Gly Ala Val Phe Leu Pro Asn Gly Thr Gly Lys Thr Leu Arg Ile Leu
65   70   75   80
Val Phe Ala Ser Gly Asn Lys Val Lys Glu Ala Val Glu Ala Gly Ala
             85   90   95
Asp Phe Met Gly Ser Asp Asp Leu Val Glu Lys Ile Lys Ser Gly Trp
            100   105   110
Leu Glu Phe Asp Val Ala Val Ala Thr Pro Asp Met Met Arg Glu Val
            115   120   125
Gly Lys Leu Gly Lys Val Leu Gly Pro Arg Asn Leu Met Pro Thr Pro
    130   135   140
Lys Thr Gly Thr Val Thr Thr Asp Val Ala Lys Ala Ile Ser Glu Leu
145   150   155   160
Arg Lys Gly Lys Ile Glu Phe Lys Ala Asp Arg Ala Gly Val Cys Asn
             165   170   175
Val Gly Val Gly Lys Leu Ser Phe Glu Ser Ser Gln Ile Lys Glu Asn
            180   185   190
Ile Glu Ala Leu Ser Ser Ala Leu Ile Lys Ala Lys Pro Pro Ala Ala
    195   200   205
Lys Gly Gln Tyr Leu Val Ser Phe Thr Ile Ser Ser Thr Met Gly Pro
    210   215   220
Gly Ile Ser Ile Asp Thr Arg Glu Leu Met Ala Ser
225   230   235

        <210> 81
        <211> 173
        <212> PRT
        <213> Chlamydia pneumoniae

406

<400> 81
Arg Gly Lys Met Lys Gln Glu Lys Thr Leu Leu Leu Gln Glu Val Glu
1   5   10   15
Asp Lys Ile Ser Ala Ala Gln Gly Phe Ile Leu Leu Arg Tyr Leu Arg
            20   25   30
Phe Thr Ala Ala Tyr Ser Arg Glu Phe Arg Asn Ser Leu Ser Gly Val
            35   40   45
Ser Ala Glu Phe Glu Val Leu Lys Lys Arg Ile Phe Phe Lys Ala Ile
    50   55   60
Glu Ala Ala Gly Leu Glu Val Asp Cys Ser Asp Thr Asp Gly His Leu
65   70   75   80
Gly Val Val Phe Ser Cys Gly Asp Pro Val Ser Ala Ala Lys Gln Val
                85   90   95
Leu Asp Phe Asn Lys Gln His Lys Asp Ser Leu Val Phe Leu Ala Gly
            100   105   110
Arg Met Asp Asn Ala Ser Leu Ser Gly Ala Glu Val Glu Ala Val Ala
            115   120   125
Lys Leu Pro Ser Leu Lys Glu Leu Arg Gln Gln Val Val Gly Leu Phe
    130   135   140
Ala Ala Pro Met Ser Gln Val Val Gly Ile Met Asn Ser Val Leu Ser
145   150   155   160
Gly Val Ile Ser Cys Val Asp Gln Lys Ala Gly Lys Asn
                165   170

<210> 82
<211> 134
<212> PRT
<213> Chlamydia pneumoniae

<400> 82
Val Arg Val Thr Lys Val Thr Thr Glu Ser Leu Glu Thr Leu Val Glu
1   5   10   15
Lys Leu Ser Asn Leu Thr Val Leu Glu Leu Ser Gln Leu Lys Lys Leu
            20   25   30
Leu Glu Glu Lys Trp Asp Val Thr Ala Ser Ala Pro Val Val Ala Val
            35   40   45
Ala Ala Gly Gly Gly Gly Glu Ala Pro Val Ala Ala Glu Pro Thr Glu
    50   55   60
Phe Ala Val Thr Leu Glu Asp Val Pro Ala Asp Lys Lys Ile Gly Val
65   70   75   80
Leu Lys Val Val Arg Glu Val Thr Gly Leu Ala Leu Lys Glu Ala Lys
                85   90   95
Glu Met Thr Glu Gly Leu Pro Lys Thr Val Lys Glu Lys Thr Ser Lys
            100   105   110
Ser Asp Ala Glu Asp Thr Val Lys Lys Leu Gln Asp Ala Gly Ala Lys
            115   120   125
Ala Ser Phe Lys Gly Leu
    130

<210> 83
<211> 1266
<212> PRT
<213> Chlamydia pneumoniae

<400> 83
Phe Arg Glu Ile Leu Ser His Gln Asn Ser Arg Arg Thr Arg Met Leu
1   5   10   15
Lys Cys Pro Glu Arg Val Ser Val Lys Lys Lys Glu Asp Ile Pro Asp
            20   25   30
Leu Pro Asn Leu Ile Glu Ile Gln Ile Lys Ser Tyr Lys Gln Phe Leu
            35   40   45

```
Gln Ile Gly Lys Leu Ala Glu Glu Arg Glu Asn Ile Gly Leu Glu Glu
    50              55                  60
Val Phe Arg Glu Ile Phe Pro Ile Lys Ser Tyr Asn Glu Ala Thr Val
65              70                  75                  80
Leu Glu Tyr Leu Ser Tyr Asn Leu Gly Val Pro Lys Tyr Ser Pro Glu
            85                  90                  95
Glu Cys Ile Arg Arg Gly Ile Thr Tyr Ser Val Thr Leu Lys Val Arg
            100                 105                 110
Phe Arg Leu Thr Asp Glu Thr Gly Ile Lys Glu Glu Glu Val Tyr Met
        115                 120                 125
Gly Thr Ile Pro Leu Met Thr Asp Lys Gly Thr Phe Ile Ile Asn Gly
    130                 135                 140
Ala Glu Arg Val Val Val Ser Gln Val His Arg Ser Pro Gly Ile Asn
145                 150                 155                 160
Phe Glu Gln Glu Lys His Ser Lys Gly Asn Ile Leu Phe Ser Phe Arg
                165                 170                 175
Ile Ile Pro Tyr Arg Gly Ser Trp Leu Glu Ala Ile Phe Asp Ile Asn
            180                 185                 190
Asp Leu Ile Tyr Ile His Ile Asp Arg Lys Lys Arg Arg Arg Lys Ile
        195                 200                 205
Leu Ala Ile Thr Phe Ile Arg Ala Leu Gly Tyr Ser Ser Asp Ala Asp
    210                 215                 220
Ile Ile Glu Glu Phe Phe Thr Ile Gly Glu Ser Ser Leu Arg Ser Glu
225                 230                 235                 240
Lys Asp Phe Ala Leu Leu Val Gly Arg Ile Leu Ala Asp Asn Ile Ile
                245                 250                 255
Asp Glu Ala Ser Ser Leu Val Tyr Gly Lys Ala Gly Glu Lys Leu Ser
            260                 265                 270
Thr Ala Met Leu Lys Arg Met Leu Asp Ala Gly Ile Ala Ser Val Lys
        275                 280                 285
Ile Ala Val Asp Ala Asp Glu Asn His Pro Ile Ile Lys Met Leu Ala
    290                 295                 300
Lys Asp Pro Thr Asp Ser Tyr Glu Ala Ala Leu Lys Asp Phe Tyr Arg
305                 310                 315                 320
Arg Leu Arg Pro Gly Glu Pro Ala Thr Leu Ala Asn Ala Arg Ser Thr
                325                 330                 335
Ile Met Arg Leu Phe Phe Asp Pro Lys Arg Tyr Asn Leu Gly Arg Val
            340                 345                 350
Gly Arg Tyr Lys Leu Asn Arg Lys Leu Gly Phe Ser Ile Asp Asp Glu
        355                 360                 365
Ala Leu Ser Gln Val Thr Leu Arg Lys Glu Asp Val Ile Gly Ala Leu
    370                 375                 380
Lys Tyr Leu Ile Arg Leu Lys Met Gly Asp Glu Lys Ala Cys Val Asp
385                 390                 395                 400
Asp Ile Asp His Leu Ala Asn Arg Arg Val Arg Ser Val Gly Glu Leu
                405                 410                 415
Ile Gln Asn Gln Cys Arg Ser Gly Leu Ala Arg Met Glu Lys Ile Val
        420                 425                 430
Arg Glu Arg Met Asn Leu Phe Asp Phe Ser Ser Asp Thr Leu Thr Pro
    435                 440                 445
Gly Lys Val Val Ser Ala Lys Gly Leu Ala Ser Val Leu Lys Asp Phe
    450                 455                 460
Phe Gly Arg Ser Gln Leu Ser Gln Phe Met Asp Gln Thr Asn Pro Val
465                 470                 475                 480
Ala Glu Leu Thr His Lys Arg Arg Leu Ser Ala Leu Gly Pro Gly Gly
                485                 490                 495
Leu Asn Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val His Ala Ser
            500                 505                 510
His Tyr Gly Arg Ile Cys Pro Ile Glu Thr Pro Glu Gly Pro Asn Ile
    515                 520                 525
```

408

Gly Leu Ile Thr Ser Leu Ser Ser Phe Ala Lys Ile Asn Glu Phe Gly
    530   535   540
Phe Ile Glu Thr Pro Tyr Arg Ile Val Arg Asp Gly Ile Val Thr Asp
545   550   555   560
Glu Ile Glu Tyr Met Thr Ala Asp Val Glu Glu Glu Cys Val Ile Ala
                565   570   575
Gln Ala Ser Ala Ser Leu Asp Glu Tyr Asn Met Phe Thr Glu Pro Val
                580   585   590
Cys Trp Val Arg Tyr Ala Gly Glu Ala Phe Glu Ala Asp Thr Ser Thr
            595   600   605
Val Thr His Met Asp Val Ser Pro Lys Gln Leu Val Ser Ile Val Thr
    610   615   620
Gly Leu Ile Pro Phe Leu Glu His Asp Asp Ala Asn Arg Ala Leu Met
625   630   635   640
Gly Ser Asn Met Gln Arg Gln Ala Val Pro Leu Leu Lys Thr Glu Ala
                645   650   655
Pro Val Val Gly Thr Gly Leu Glu Cys Arg Ala Ala Lys Asp Ser Gly
                660   665   670
Ala Ile Val Val Ala Glu Glu Asp Gly Val Val Asp Phe Val Asp Gly
            675   680   685
Tyr Lys Val Val Val Ala Ala Lys His Asn Pro Thr Ile Lys Arg Thr
    690   695   700
Tyr His Leu Lys Lys Phe Leu Arg Ser Asn Ser Gly Thr Cys Ile Asn
705   710   715   720
Gln Gln Pro Leu Cys Ala Val Gly Asp Val Ile Thr Lys Gly Asp Val
                725   730   735
Ile Ala Asp Gly Pro Ala Thr Asp Arg Gly Glu Leu Ala Leu Gly Lys
            740   745   750
Asn Val Leu Val Ala Phe Met Pro Trp Tyr Gly Tyr Asn Phe Glu Asp
            755   760   765
Ala Ile Ile Ile Ser Glu Lys Leu Ile Arg Glu Asp Ala Tyr Thr Ser
    770   775   780
Ile Tyr Ile Glu Glu Phe Glu Leu Thr Ala Arg Asp Thr Lys Leu Gly
785   790   795   800
Lys Glu Glu Ile Thr Arg Asp Ile Pro Asn Val Ser Asp Glu Val Leu
                805   810   815
Ala Asn Leu Gly Glu Asp Gly Ile Ile Arg Ile Gly Ala Glu Val Lys
            820   825   830
Pro Gly Asp Ile Leu Val Gly Lys Ile Thr Pro Lys Ser Glu Thr Glu
            835   840   845
Leu Ala Pro Glu Glu Arg Leu Leu Arg Ala Ile Phe Gly Glu Lys Ala
    850   855   860
Ala Asp Val Lys Asp Ala Ser Leu Thr Val Pro Pro Gly Thr Glu Gly
865   870   875   880
Val Val Met Asp Val Lys Val Phe Ser Arg Lys Asp Arg Leu Ser Lys
                885   890   895
Ser Asp Asp Glu Leu Val Glu Glu Ala Val His Leu Lys Asp Leu Gln
                900   905   910
Lys Gly Tyr Lys Asn Gln Val Ala Thr Leu Lys Thr Glu Tyr Arg Glu
        915   920   925
Lys Leu Gly Ala Leu Leu Leu Asn Glu Lys Ala Pro Ala Ala Ile Ile
    930   935   940
His Arg Arg Thr Ala Glu Ile Val Val His Glu Gly Leu Leu Phe Asp
945   950   955   960
Gln Glu Thr Ile Glu Arg Ile Glu Gln Glu Asp Leu Val Asp Leu Leu
                965   970   975
Met Pro Asn Cys Glu Met Tyr Glu Val Leu Lys Gly Leu Leu Ser Asp
            980   985   990
Tyr Glu Thr Ala Leu Gln Arg Leu Glu Ile Asn Tyr Lys Thr Glu Val
    995   1000   1005

409

Glu His Ile Arg Glu Gly Asp Ala Asp Leu Asp His Gly Val Ile Arg
    1010   1015   1020
Gln Val Lys Val Tyr Val Ala Ser Lys Arg Lys Leu Gln Val Gly Asp
1025   1030   1035   1040
Lys Met Ala Gly Arg His Gly Asn Lys Gly Val Val Ser Lys Ile Val
              1045   1050   1055
Pro Glu Ala Asp Met Pro Tyr Leu Ser Asn Gly Glu Thr Val Gln Met
              1060   1065   1070
Ile Leu Asn Pro Leu Gly Val Pro Ser Arg Met Asn Leu Gly Gln Val
              1075   1080   1085
Leu Glu Thr His Leu Gly Tyr Ala Ala Lys Thr Ala Gly Ile Tyr Val
    1090   1095   1100
Lys Thr Pro Val Phe Glu Gly Phe Pro Glu Gln Arg Ile Trp Asp Met
1105   1110   1115   1120
Met Ile Glu Gln Gly Leu Pro Glu Asp Gly Lys Ser Phe Leu Tyr Asp
              1125   1130   1135
Gly Lys Thr Gly Glu Arg Phe Asp Asn Lys Val Val Ile Gly Tyr Ile
              1140   1145   1150
Tyr Met Leu Lys Leu Ser His Leu Ile Ala Asp Lys Ile His Ala Arg
    1155   1160   1165
Ser Ile Gly Pro Tyr Ser Leu Val Thr Gln Gln Pro Leu Gly Gly Lys
    1170   1175   1180
Ala Gln Met Gly Gly Gln Arg Phe Gly Glu Met Glu Val Trp Ala Leu
1185   1190   1195   1200
Glu Ala Tyr Gly Val Ala His Met Leu Gln Glu Ile Leu Thr Val Lys
              1205   1210   1215
Ser Asp Asp Val Ser Gly Arg Thr Arg Ile Tyr Glu Ser Ile Val Lys
              1220   1225   1230
Gly Glu Asn Leu Leu Arg Ser Gly Thr Pro Glu Ser Phe Asn Val Leu
    1235   1240   1245
Ile Lys Glu Met Gln Gly Leu Gly Leu Asp Val Arg Pro Met Val Val
    1250   1255   1260
Asp Ala
1265

        <210> 84
        <211> 1410
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 84
Cys Ser Ser Tyr Gly Arg Arg Arg Leu Lys Asn Asp Val Leu Glu Lys
1   5   10   15
Ile Met Phe Gly Glu Asn Ser Arg Asp Ile Gly Val Leu Ser Lys Glu
              20   25   30
Gly Leu Phe Asp Lys Leu Glu Ile Gly Ile Ala Ser Asp Ile Thr Ile
              35   40   45
Arg Asp Lys Trp Ser Cys Gly Glu Ile Lys Lys Pro Glu Thr Ile Asn
    50   55   60
Tyr Arg Thr Phe Lys Pro Glu Lys Gly Gly Leu Phe Cys Glu Lys Ile
65   70   75   80
Phe Gly Pro Thr Lys Asp Trp Glu Cys Cys Cys Gly Lys Tyr Lys Lys
              85   90   95
Ile Lys His Lys Gly Ile Val Cys Asp Arg Cys Gly Val Glu Val Thr
              100   105   110
Leu Ser Lys Val Arg Arg Glu Arg Met Ala His Ile Glu Leu Ala Val
              115   120   125
Pro Ile Val His Ile Trp Phe Phe Lys Thr Thr Pro Ser Arg Ile Gly
    130   135   140
Asn Val Leu Gly Met Thr Ala Ser Asp Leu Glu Arg Val Ile Tyr Tyr
145   150   155   160

410

Glu Glu Tyr Val Val Ile Asp Pro Gly Lys Thr Asp Leu Thr Lys Lys
                    165   170   175
Gln Leu Leu Asn Asp Ala Gln Tyr Arg Glu Val Val Glu Lys Trp Gly
            180   185   190
Lys Asp Ala Phe Val Ala Lys Met Gly Gly Glu Ala Ile Tyr Asp Leu
        195   200   205
Leu Lys Ser Glu Asp Leu Gln Ser Leu Leu Lys Asp Leu Lys Glu Arg
    210   215   220
Leu Arg Lys Thr Lys Ser Gln Gln Ala Arg Met Lys Leu Ala Lys Arg
225   230   235   240
Leu Lys Ile Ile Glu Gly Phe Val Ser Ser Ser Asn His Pro Glu Trp
                245   250   255
Met Val Leu Lys Asn Ile Pro Val Val Pro Pro Asp Leu Arg Pro Leu
            260   265   270
Val Pro Leu Asp Gly Gly Arg Phe Ala Thr Ser Asp Leu Asn Asp Leu
        275   280   285
Tyr Arg Arg Val Ile Asn Arg Asn Asn Arg Leu Lys Ala Ile Leu Arg
    290   295   300
Leu Lys Thr Pro Glu Val Ile Val Arg Asn Glu Lys Arg Met Leu Gln
305   310   315   320
Glu Ala Val Asp Ala Leu Phe Asp Asn Gly Arg His Gly His Pro Val
                325   330   335
Met Gly Ala Gly Asn Arg Pro Leu Lys Ser Leu Ser Glu Met Leu Lys
            340   345   350
Gly Lys Asn Gly Arg Phe Arg Gln Asn Leu Leu Gly Lys Arg Val Asp
        355   360   365
Tyr Ser Gly Arg Ser Val Ile Ile Val Gly Pro Glu Leu Lys Phe Asn
    370   375   380
Gln Cys Gly Leu Pro Lys Glu Met Ala Leu Glu Leu Phe Glu Pro Phe
385   390   395   400
Ile Ile Lys Arg Leu Lys Asp Gln Gly Ser Val Tyr Thr Ile Arg Ser
                405   410   415
Ala Lys Lys Met Ile Gln Arg Gly Ala Pro Glu Val Trp Asp Val Leu
            420   425   430
Glu Glu Ile Ile Lys Gly His Pro Val Leu Leu Asn Arg Ala Pro Thr
        435   440   445
Leu His Arg Leu Gly Ile Gln Ala Phe Glu Pro Val Leu Ile Glu Gly
    450   455   460
Lys Ala Ile Arg Ile His Pro Leu Val Cys Ala Ala Phe Asn Ala Asp
465   470   475   480
Phe Asp Gly Asp Gln Met Ala Val His Val Pro Leu Ser Val Glu Ala
                485   490   495
Gln Leu Glu Ala Lys Val Leu Met Met Ala Pro Asp Asn Ile Phe Leu
            500   505   510
Pro Ser Ser Gly Lys Pro Val Ala Ile Pro Ser Lys Asp Met Thr Leu
        515   520   525
Gly Leu Tyr Tyr Leu Met Ala Asp Pro Thr Tyr Phe Pro Glu Glu His
        530   535   540
Gly Gly Lys Thr Lys Ile Phe Lys Asp Glu Ile Glu Val Leu Arg Ala
545   550   555   560
Leu Asn Asn Gly Gly Phe Ile Asp Asp Val Phe Gly Asp Arg Arg Asp
                565   570   575
Glu Thr Gly Arg Gly Ile His Ile His Glu Lys Ile Lys Val Arg Ile
            580   585   590
Asp Gly Gln Ile Ile Glu Thr Thr Pro Gly Arg Val Leu Phe Asn Arg
        595   600   605
Ile Val Pro Lys Glu Leu Gly Phe Gln Asn Tyr Ser Met Pro Ser Lys
    610   615   620
Arg Ile Ser Glu Leu Ile Leu Gln Cys Tyr Lys Lys Val Gly Leu Glu
625   630   635   640

411

```
Ala Thr Val Arg Phe Leu Asp Asp Leu Lys Asp Leu Gly Phe Ile Gln
                645             650             655
Ala Thr Lys Ala Ala Ile Ser Met Gly Leu Lys Asp Val Arg Ile Pro
            660             665             670
Asp Ile Lys Ser His Ile Leu Lys Asp Ala Tyr Asp Lys Val Ala Ile
            675             680             685
Val Lys Lys Gln Tyr Asp Asp Gly Ile Ile Thr Glu Gly Glu Arg His
        690             695             700
Ser Lys Thr Ile Ser Ile Trp Thr Glu Val Ser Glu Gln Leu Ser Asp
705             710             715             720
Ala Leu Tyr Val Glu Ile Ser Lys Gln Thr Arg Ser Lys His Asn Pro
                725             730             735
Leu Phe Leu Met Ile Asp Ser Gly Ala Arg Gly Asn Lys Ser Gln Leu
                740             745             750
Lys Gln Leu Gly Ala Leu Arg Gly Leu Met Ala Lys Pro Asn Gly Ala
        755             760             765
Ile Ile Glu Ser Pro Ile Thr Ser Asn Phe Arg Glu Gly Leu Thr Val
    770             775             780
Leu Glu Tyr Ser Ile Ser Ser His Gly Ala Arg Lys Gly Leu Ala Asp
785             790             795             800
Thr Ala Leu Lys Thr Ala Asp Ser Gly Tyr Leu Thr Arg Arg Leu Val
            805             810             815
Asp Val Ala Gln Asp Val Ile Ile Thr Glu Lys Asp Cys Gly Thr Leu
            820             825             830
Asn His Ile Glu Ile Ser Ala Ile Gly Gln Gly Ser Glu Glu Leu Leu
            835             840             845
Pro Leu Lys Asp Arg Ile Tyr Gly Arg Thr Val Ala Glu Asp Val Tyr
    850             855             860
Gln Pro Gly Asp Lys Ser Arg Leu Leu Ala Gln Ser Gly Asp Val Leu
865             870             875             880
Asn Ser Val Gln Ala Glu Ala Ile Asp Asp Ala Gly Ile Glu Thr Ile
            885             890             895
Lys Ile Arg Ser Thr Leu Thr Cys Glu Ser Pro Arg Gly Val Cys Ala
        900             905             910
Lys Cys Tyr Gly Leu Asn Leu Ala Asn Gly Arg Leu Ile Gly Met Gly
        915             920             925
Glu Ala Val Gly Ile Ile Ala Ala Gln Ser Ile Gly Glu Pro Gly Thr
    930             935             940
Gln Leu Thr Met Arg Thr Phe His Leu Gly Gly Ile Ala Ala Thr Ser
945             950             955             960
Ser Thr Pro Glu Ile Ile Thr Asn Ser Asp Gly Ile Leu Val Tyr Met
            965             970             975
Asp Leu Arg Val Val Leu Gly Gln Glu Gly His Asn Leu Val Leu Asn
            980             985             990
Lys Lys Gly Ala Leu His Val Val Gly Asp Glu Gly Arg Thr Leu Asn
        995             1000            1005
Glu Tyr Lys Lys Leu Leu Ser Thr Lys Ser Ile Glu Ser Leu Glu Val
    1010            1015            1020
Phe Pro Val Glu Leu Gly Val Lys Ile Leu Val Ala Asp Gly Thr Pro
1025            1030            1035            1040
Val Ser Gln Gly Gln Arg Ile Gly Glu Val Glu Leu His Asn Ile Pro
            1045            1050            1055
Ile Ile Cys Asp Lys Pro Gly Phe Ile Lys Tyr Glu Asp Leu Val Glu
            1060            1065            1070
Gly Ile Ser Thr Glu Lys Val Val Asn Lys Asn Thr Gly Leu Val Glu
            1075            1080            1085
Leu Ile Val Lys Gln His Arg Gly Glu Leu His Pro Gln Ile Ala Ile
            1090            1095            1100
Tyr Asp Asp Ala Asp Leu Ser Glu Leu Val Gly Thr Tyr Ala Ile Pro
1105            1110            1115            1120
```

Ser Gly Ala Ile Ile Ser Val Glu Glu Gly Gln Arg Val Asp Pro Gly
                1125   1130   1135
Met Leu Leu Ala Arg Leu Pro Arg Gly Ala Ile Lys Thr Lys Asp Ile
                1140   1145   1150
Thr Gly Gly Leu Pro Arg Val Ala Glu Leu Val Glu Ala Arg Lys Pro
                1155   1160   1165
Glu Asp Ala Ala Asp Ile Ala Lys Ile Asp Gly Val Val Asp Phe Lys
                1170   1175   1180
Gly Ile Gln Lys Asn Lys Arg Ile Leu Val Val Cys Asp Glu Met Thr
1185   1190   1195   1200
Gly Met Glu Glu Glu His Leu Ile Pro Leu Thr Lys His Leu Ile Val
                1205   1210   1215
Gln Arg Gly Asp Ser Val Ile Lys Gly Gln Gln Leu Thr Asp Gly Leu
                1220   1225   1230
Val Val Pro His Glu Ile Leu Glu Ile Cys Gly Val Arg Glu Leu Gln
                1235   1240   1245
Lys Tyr Leu Val Asn Glu Val Gln Glu Val Tyr Arg Leu Gln Gly Val
                1250   1255   1260
Asp Ile Asn Asp Lys His Ile Glu Ile Ile Val Arg Gln Met Leu Gln
1265   1270   1275   1280
Lys Val Arg Ile Thr Asp Pro Gly Asp Thr Thr Leu Leu Phe Gly Glu
                1285   1290   1295
Asp Val Asn Lys Lys Glu Phe Tyr Glu Glu Asn Arg Arg Thr Glu Glu
                1300   1305   1310
Asp Gly Gly Lys Pro Ala Gln Ala Val Pro Val Leu Leu Gly Ile Thr
                1315   1320   1325
Lys Ala Ser Leu Gly Thr Glu Ser Phe Ile Ser Ala Ala Ser Phe Gln
                1330   1335   1340
Asp Thr Thr Arg Val Leu Thr Asp Ala Ala Cys Cys Ser Lys Thr Asp
1345   1350   1355   1360
Tyr Leu Leu Gly Phe Lys Glu Asn Val Ile Met Gly His Met Ile Pro
                1365   1370   1375
Gly Gly Thr Gly Phe Glu Thr His Lys Arg Ile Lys Gln Tyr Leu Glu
                1380   1385   1390
Lys Glu Gln Glu Asp Leu Val Phe Asp Phe Val Ser Glu Thr Glu Cys
                1395   1400   1405
Val Cys
1410

        <210> 85
        <211> 339
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 85
Arg Cys Leu Glu Ile Asn Ser Asp Ala Lys Val Pro Met Ser Asn Gln
1   5   10   15
Phe Asp Gln Leu Lys Lys Leu Ser Thr Ile Val Cys Asp Ser Gly Asp
                20   25   30
Pro Glu Leu Val Lys Ala Ser Gly Ser Gln Asp Ala Thr Thr Asn Pro
                35   40   45
Ser Leu Ile Leu Lys Val Ala Gln Glu Pro Lys Phe Gln Glu Leu Leu
                50   55   60
Asn Glu Ala Val Val Trp Gly Ile Arg Gln Asn Gly Asp Asp Leu Gln
65   70   75   80
Thr Leu Ser Phe Ile Leu Asp Lys Ile Gln Val Asn Phe Ala Leu Glu
                85   90   95
Ile Ile Lys Asn Ile Pro Gly Arg Ile Ser Leu Glu Ile Asp Ala Arg
                100   105   110
Leu Ser Phe Asn Val Glu Ala Met Val Gln Arg Ala Val Phe Leu Ser
                115   120   125

413

```
Gln Leu Phe Glu Ala Met Gly Gly Asp Lys Lys Arg Leu Leu Val Lys
130                 135                 140
Ile Pro Gly Thr Trp Glu Gly Ile Arg Ala Val Glu Phe Leu Glu Ala
145             150                 155                 160
Lys Gly Ile Ala Cys Asn Val Thr Leu Ile Phe Asn Leu Val Gln Ala
                165                 170                 175
Ile Ala Ala Ala Lys Ala Lys Ala Thr Leu Ile Ser Pro Phe Val Gly
            180                 185                 190
Arg Ile Tyr Asp Trp Trp Ile Ala Ala Tyr Gly Asp Glu Gly Tyr Ser
        195                 200                 205
Ile Asp Ala Asp Pro Gly Val Ala Ser Val Ser Asn Ile Tyr Ala Tyr
    210                 215                 220
Tyr Lys Lys Phe Gly Ile Pro Thr Gln Ile Met Ala Ala Ser Phe Arg
225             230                 235                 240
Thr Lys Glu Gln Val Leu Ala Leu Ala Gly Cys Asp Leu Leu Thr Ile
            245                 250                 255
Ser Pro Lys Leu Leu Asp Glu Leu Lys Lys Ser Gln His Pro Val Lys
        260                 265                 270
Lys Glu Leu Asp Pro Ala Glu Ala Lys Lys Leu Asp Val Gln Pro Ile
        275                 280                 285
Glu Leu Thr Glu Ser Phe Phe Arg Phe Leu Met Asn Glu Asp Ala Met
    290                 295                 300
Ala Thr Glu Lys Leu Ala Glu Gly Ile Arg Ile Phe Ala Gly Asp Thr
305             310                 315                 320
Gln Ile Leu Glu Thr Ala Ile Thr Glu Phe Ile Lys Gln Ile Ala Ala
            325                 330                 335
Glu Gly Ala
```

```
        <210> 86
        <211> 132
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 86
Ser Glu Met Lys Asn Lys Met Asp Tyr Lys Ser Gln Leu Val Phe Ser
1               5                   10                  15
Cys Pro Cys Cys Cys Lys Gly Asn Val Cys Phe Ser Val Phe Asn Leu
            20                  25                  30
Asp Val Ile Leu Thr Cys Asn Val Cys Ser Ser Thr Tyr Thr Phe Asp
        35                  40                  45
Ser Val Ile Arg Asn Glu Ile Arg Gln Phe Val Ala Leu Cys Lys Arg
    50                  55                  60
Ile His Asp Ala Asn Ser Ile Leu Gly Asn Ala Thr Val Ser Val Ser
65                  70                  75                  80
Val Glu Asp Asn Gln Met Asp Ile Pro Phe Gln Leu Leu Phe Ser Arg
            85                  90                  95
Phe Pro Val Val Leu Asn Leu Ser Leu Asp Gly Lys Lys Ile Ala Ile
            100                 105                 110
Arg Phe Leu Phe Asp Ala Leu Asn Thr Ser Ile Leu His Gln Glu Ser
    115                 120                 125
Asp Leu Ile Ser
    130
```

```
        <210> 87
        <211> 249
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 87

```
Phe Ser Met Lys Phe Phe Ile Leu Phe Ile Leu Ile Val Ala Gln Phe
1               5               10              15
Pro Ala Phe Ser Ala Gln Pro Arg Thr Gln Val Ser Ala Ser His Ser
        20              25              30
Lys Gln Ala Lys Ala Arg Arg Thr Ser Arg Ile Arg Ser Ser Ala Ala
        35              40              45
Thr Asn Ala Ser Val Ser Arg Tyr Lys Thr Arg Ala Ala Ala Arg Lys
    50              55              60
Lys Ile Gly Lys Phe Glu Lys Lys Pro Ser Leu Ser Pro Val Gln Trp
65              70              75              80
Val Arg Tyr Ser Gly Lys Asn Tyr Ser Ile Gln Thr Pro Ser Leu Trp
            85              90              95
Gln Cys Ile Asp Asp Lys Thr Gln Leu Pro Glu Lys Leu Asp Val Leu
        100             105             110
Leu Ile Gly Lys Gly Lys Gly Asn Leu Thr Pro Thr Ile Asn Ile Ala
        115             120             125
Gln Glu Ile Thr Ser Lys Ser Ser Lys Glu Tyr Ile Glu Glu Ile Leu
    130             135             140
Ala Tyr His Lys Ala Asn Glu Met Thr Leu Glu Ser Gly Ile Phe Thr
145             150             155             160
Gln Ile Gln Ser Pro Ser Gly Glu Phe Thr Ile Ile Lys Thr Glu Lys
            165             170             175
Asn Ser Ser Trp Gly Arg Val Phe Cys Leu Gln Ala Thr Thr Val Ile
            180             185             190
Asp His Thr Ala Tyr Ile Phe Thr Ser Thr Ala Thr Leu Asp Asp Tyr
        195             200             205
Ala Glu Leu Ser Phe Thr Phe Leu Lys Val Val Ser Ser Phe Gln Ile
210             215             220
Arg Gly Gly Lys Glu Ala Thr Ser Gly Asp Ala Ile Leu Glu Lys Ala
225             230             235             240
Leu Glu Ala Leu Gln Asn Glu Asn Lys
            245
```

<210> 88
<211> 210
<212> PRT
<213> Chlamydia pneumoniae

<400> 88

```
Asn Ile Met Ala Asn Leu Asn Ala Asp Gly Lys Leu Lys Gln Ile Cys
1               5               10              15
Asp Ala Leu Arg Leu Asp Thr Leu Lys Pro Ala Glu Asp Glu Ala Ala
        20              25              30
Ala Leu Leu His Asn Ala Lys Glu Gln Ala Lys Arg Ile Ile Gln Glu
        35              40              45
Ala Gln Glu Glu Ala Arg Lys Ile Leu Glu Thr Ala Glu Glu Arg Ala
    50              55              60
His Gln Lys Ile Lys Gln Gly Glu Val Ala Leu Ser Gln Ala Gly Lys
65              70              75              80
Arg Ala Leu Glu Ala Leu Lys Gln Ala Val Glu Asn Lys Ile Phe Arg
            85              90              95
Glu Ser Leu Val Glu Trp Leu Glu His Val Thr Thr Asp Pro Glu Val
            100             105             110
Ser Thr Lys Leu Ile Gln Ala Leu Val Gln Ala Leu Glu Ala Gln Gly
        115             120             125
Val Ser Gly Asn Leu Thr Ala Tyr Ile Gly Lys His Val Ser Pro Arg
    130             135             140
Ala Val Asn Glu Leu Leu Gly Lys Ala Val Thr Thr Lys Leu Arg Lys
145             150             155             160
```

415

Lys Ser Val Val Val Gly Ser Phe Val Gly Gly Val Gln Leu Lys Val
165 170 175
Glu Glu Lys Asn Trp Val Leu Asp Leu Ser Ser Ser Ala Leu Leu Glu
180 185 190
Ile Phe Thr Arg Tyr Leu Gln Lys Asp Phe Arg Glu Met Ile Phe Gln
195 200 205
Gly Ser
210

<210> 89
<211> 279
<212> PRT
<213> Chlamydia pneumoniae

<400> 89
Ser His Glu Lys Ile Phe Ser Ile Phe Lys Val Val Val Met Thr Gln
1 5 10 15
Tyr Tyr Phe Leu Ser Ser Phe Leu Pro Thr Gln Leu Pro Glu Ser Val
20 25 30
Pro Leu Phe Ser Ile Ser Asp Leu Asp Asp Leu Leu Tyr Leu Asn Leu
35 40 45
Ser Glu Asn Asp Leu Cys Asn Tyr Gly Leu Leu Lys Arg Phe Phe Asp
50 55 60
Phe Glu Asn Phe Ala Phe Phe Trp Ala Gly Lys Pro Ile Pro Phe Ser
65 70 75 80
Phe Gly Glu Val Thr Gln Glu Asn Val Glu Arg Met Leu Ser Ser Gln
85 90 95
Gln Trp Ser Asp Asp Asn Asp Phe Glu Asp Phe Phe Lys Asp Phe Leu
100 105 110
Met Asn His Lys Ser Ser Gln Asp Arg Leu Asn His Phe Ser Asp Leu
115 120 125
Phe Arg Glu Phe Leu Ser Tyr His Gln Thr Asn Ser Ser Lys Phe Leu
130 135 140
Gln Asp Tyr Phe Arg Phe Gln Gln Gln Leu Arg Val Val Leu Ala Gly
145 150 155 160
Phe Arg Ala Arg Val Leu Asn Met Asp Val Ser Tyr Val Leu Arg Asp
165 170 175
Glu Asp Ser Ser Asp Pro Val Val Leu Glu Val Leu Met Gln Lys Asp
180 185 190
Ser Pro Asn Tyr Glu Leu Pro Glu Glu Phe Ser Asp Leu Gln Gly Val
195 200 205
Leu Asp Asp Tyr Gly Leu Leu Pro His Thr Leu Asn Arg Ala Leu Ala
210 215 220
Leu Tyr Gln Phe His Lys Leu Glu Gly Phe Cys Ser Asp Ser Tyr Phe
225 230 235 240
Asp Gly Asn Val Ile Leu Ala Arg Cys Ala Thr Tyr Met Phe Ala Ile
245 250 255
Arg Asn Ser Leu Ala Ser Val Glu Lys Gly Arg Glu Ile Ile Asn His
260 265 270
Ile Glu Lys Ala Ile Lys Trp
275

<210> 90
<211> 598
<212> PRT
<213> Chlamydia pneumoniae

<400> 90
Ser Tyr Arg Lys Gly Asn Gln Met Val Thr Val Ser Glu Gln Thr Ala
1 5 10 15

416

```
Gln Gly His Val Ile Glu Ala Tyr Gly Asn Leu Leu Arg Val Arg Phe
            20                  25                  30
Asp Gly Tyr Val Arg Gln Gly Glu Val Ala Tyr Val Asn Val Asp Asn
        35                  40                  45
Thr Trp Leu Lys Ala Glu Val Ile Glu Val Ala Asp Gln Glu Val Lys
    50                  55                  60
Val Gln Val Phe Glu Asp Thr Gln Gly Ala Cys Arg Gly Ala Leu Val
65                  70                  75                  80
Thr Phe Ser Gly His Leu Leu Glu Ala Glu Leu Gly Pro Gly Leu Leu
                85                  90                  95
Gln Gly Ile Phe Asp Gly Leu Gln Asn Arg Leu Glu Val Leu Ala Glu
                100                 105                 110
Asp Ser Ser Phe Leu Gln Arg Gly Lys His Val Asn Ala Ile Ser Asp
        115                 120                 125
His Asn Leu Trp Asn Tyr Thr Pro Val Ala Ser Val Gly Asp Thr Leu
    130                 135                 140
Arg Arg Gly Asp Leu Leu Gly Thr Val Pro Glu Gly Arg Phe Thr His
145                 150                 155                 160
Lys Ile Met Val Pro Phe Ser Cys Phe Gln Glu Val Thr Leu Thr Trp
                165                 170                 175
Val Ile Ser Glu Gly Thr Tyr Asn Ala His Thr Val Val Ala Lys Ala
                180                 185                 190
Arg Asp Ala Gln Gly Lys Glu Cys Ala Phe Thr Met Val Gln Arg Trp
        195                 200                 205
Pro Ile Lys Gln Ala Phe Ile Glu Gly Glu Lys Ile Pro Ala His Lys
    210                 215                 220
Ile Met Asp Val Gly Leu Arg Ile Leu Asp Thr Gln Ile Pro Val Leu
225                 230                 235                 240
Lys Gly Gly Thr Phe Cys Thr Pro Gly Pro Phe Gly Ala Gly Lys Thr
                245                 250                 255
Val Leu Gln His His Leu Ser Lys Tyr Ala Ala Val Asp Ile Val Ile
                260                 265                 270
Leu Cys Ala Cys Gly Glu Arg Ala Gly Glu Val Val Glu Val Leu Gln
        275                 280                 285
Glu Phe Pro His Leu Ile Asp Pro His Thr Gly Lys Ser Leu Met His
    290                 295                 300
Arg Thr Cys Ile Ile Cys Asn Thr Ser Ser Met Pro Val Ala Ala Arg
305                 310                 315                 320
Glu Ser Ser Ile Tyr Leu Gly Val Thr Ile Ala Glu Tyr Tyr Arg Gln
                325                 330                 335
Met Gly Leu Asp Ile Leu Leu Leu Ala Asp Ser Thr Ser Arg Trp Ala
                340                 345                 350
Gln Ala Leu Arg Glu Ile Ser Gly Arg Leu Glu Glu Ile Pro Gly Glu
        355                 360                 365
Glu Ala Phe Pro Ala Tyr Leu Ser Ser Arg Ile Ala Ala Phe Tyr Glu
    370                 375                 380
Arg Gly Gly Ala Ile Thr Thr Lys Asp Gly Ser Glu Gly Ser Leu Thr
385                 390                 395                 400
Ile Cys Gly Ala Val Ser Pro Ala Gly Gly Asn Phe Glu Glu Pro Val
                405                 410                 415
Thr Gln Ser Thr Leu Ala Val Val Gly Ala Phe Cys Gly Leu Ser Lys
                420                 425                 430
Ala Arg Ala Asp Ala Arg Arg Tyr Pro Ser Ile Asp Pro Leu Ile Ser
        435                 440                 445
Trp Ser Lys Tyr Leu Asn Gln Val Gly Gln Ile Leu Glu Glu Lys Val
    450                 455                 460
Ser Gly Trp Gly Gly Ala Val Lys Lys Ala Ala Gln Phe Leu Glu Lys
465                 470                 475                 480
Gly Ser Glu Ile Gly Lys Arg Met Glu Val Val Gly Glu Glu Gly Val
                485                 490                 495
```

417

```
Ser Met Glu Asp Met Glu Ile Tyr Leu Lys Ala Glu Leu Tyr Asp Phe
        500             505             510
Cys Tyr Leu Gln Gln Asn Ala Phe Asp Pro Val Asp Cys Tyr Cys Pro
        515             520             525
Phe Glu Arg Gln Ile Glu Leu Phe Ser Leu Ile Ser Arg Ile Phe Asp
        530             535             540
Ala Lys Phe Val Phe Asp Ser Pro Asp Asp Ala Arg Ser Phe Phe Leu
545             550             555             560
Glu Leu Gln Ser Lys Ile Lys Thr Leu Asn Gly Leu Lys Phe Leu Ser
                565             570             575
Glu Glu Tyr His Glu Ser Lys Glu Val Ile Val Arg Leu Leu Glu Lys
        580             585             590
Thr Met Val Gln Met Ala
        595
```

```
        <210> 91
        <211> 452
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 91
Leu Asp Cys Trp Lys Lys Gln Trp Tyr Lys Trp Arg Lys Asp Met Gln
  1             5              10              15
Thr Ile Tyr Thr Lys Ile Thr Asp Ile Lys Gly Asn Leu Ile Thr Val
        20              25              30
Glu Ala Glu Gly Ala Arg Leu Gly Glu Leu Ala Thr Ile Thr Arg Ser
        35              40              45
Asp Gly Arg Ser Ser Tyr Ala Ser Val Leu Arg Phe Asp Leu Lys Lys
    50              55              60
Val Thr Leu Gln Val Phe Gly Gly Thr Ser Gly Leu Ser Thr Gly Asp
65              70              75              80
His Val Thr Phe Leu Gly Arg Pro Met Glu Val Thr Phe Gly Ser Ser
                85              90              95
Leu Leu Gly Arg Arg Leu Asn Gly Ile Gly Lys Pro Ile Asp Asn Glu
            100             105             110
Gly Glu Cys Phe Gly Glu Pro Ile Glu Ile Ala Thr Pro Thr Phe Asn
        115             120             125
Pro Val Cys Arg Ile Val Pro Arg Ser Met Val Arg Thr Asn Ile Pro
        130             135             140
Met Ile Asp Val Phe Asn Cys Leu Val Lys Ser Gln Lys Ile Pro Ile
145             150             155             160
Phe Ser Ser Ser Gly Glu His His Asn Ala Leu Leu Met Arg Ile Ala
                165             170             175
Ala Gln Thr Asp Ala Asp Ile Val Val Ile Gly Gly Met Gly Leu Thr
            180             185             190
Phe Val Asp Tyr Ser Phe Phe Val Glu Glu Ser Lys Lys Leu Gly Phe
        195             200             205
Ala Asp Lys Cys Val Met Phe Ile His Lys Ala Val Asp Ala Pro Val
        210             215             220
Glu Cys Val Leu Val Pro Asp Met Ala Leu Ala Cys Ala Glu Lys Phe
225             230             235             240
Ala Val Glu Glu Lys Lys Asn Val Leu Val Leu Leu Thr Asp Met Thr
                245             250             255
Ala Phe Ala Asp Ala Leu Lys Glu Ile Ser Ile Thr Met Asp Gln Ile
            260             265             270
Pro Ala Asn Arg Gly Tyr Pro Gly Ser Leu Tyr Ser Asp Leu Ala Leu
        275             280             285
Arg Tyr Glu Lys Ala Val Glu Ile Ala Asp Gly Gly Ser Ile Thr Leu
        290             295             300
Ile Thr Val Thr Thr Met Pro Ser Asp Asp Ile Thr His Pro Val Pro
305             310             315             320
```

418

```
Asp Asn Thr Gly Tyr Ile Thr Glu Gly Gln Phe Tyr Leu Arg Asn Asn
                325               330               335
Arg Ile Asp Pro Phe Gly Ser Leu Ser Arg Leu Lys Gln Leu Val Ile
            340               345               350
Gly Lys Val Thr Arg Glu Asp His Gly Asp Leu Ala Asn Ala Leu Ile
            355               360               365
Arg Leu Tyr Ala Asp Ser Arg Lys Ala Thr Glu Arg Met Ala Met Gly
        370               375               380
Phe Lys Leu Ser Asn Trp Asp Lys Lys Leu Leu Ala Phe Ser Glu Leu
385               390               395               400
Phe Glu Thr Arg Leu Met Ser Leu Glu Val Asn Ile Pro Leu Glu Glu
            405               410               415
Ala Leu Asp Ile Gly Trp Lys Ile Leu Ala Gln Ser Phe Thr Ser Glu
            420               425               430
Glu Val Gly Ile Lys Ala Gln Leu Ile Asn Lys Tyr Trp Pro Lys Ala
            435               440               445
Cys Leu Ser Lys
    450


        <210> 92
        <211> 214
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 92
Val Leu Ala Lys Ser Met Ser Val Gln Val Lys Leu Thr Lys Asn Ser
  1           5               10                15
Phe Arg Leu Glu Lys Gln Lys Leu Ala Arg Leu Gln Thr Tyr Leu Pro
            20              25              30
Thr Leu Lys Leu Lys Lys Ala Leu Leu Gln Ala Glu Val Gln Asn Ala
            35              40              45
Val Lys Asp Ala Ala Glu Cys Asp Lys Asp Tyr Val Gln Ala Tyr Glu
    50              55              60
Arg Ile Tyr Ala Phe Ala Glu Leu Phe Ser Ile Pro Leu Cys Thr Asp
65              70              75              80
Cys Val Glu Lys Ser Phe Glu Ile Gln Ser Ile Asp Asn Asp Phe Glu
            85              90              95
Asn Ile Ala Gly Val Glu Val Pro Ile Val Arg Glu Val Thr Leu Phe
            100             105             110
Pro Ala Ser Tyr Ser Leu Leu Gly Thr Pro Ile Trp Leu Asp Thr Met
            115             120             125
Leu Ser Ala Ser Lys Glu Leu Val Val Lys Lys Val Met Ala Glu Val
    130             135             140
Ser Lys Glu Arg Leu Lys Ile Leu Glu Glu Glu Leu Arg Ala Val Ser
145             150             155             160
Ile Arg Val Asn Leu Phe Glu Lys Lys Leu Ile Pro Glu Thr Thr Lys
            165             170             175
Ile Leu Lys Lys Ile Ala Val Phe Leu Ser Asp Arg Ser Ile Thr Asp
            180             185             190
Val Gly Gln Val Lys Met Ala Lys Lys Lys Ile Glu Leu Arg Lys Ala
    195             200             205
Arg Gly Asp Glu Cys Val
    210


        <210> 93
        <211> 660
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 93

```
Val Arg Leu Asn Ile His Lys Tyr Leu Phe Ile Gly Arg Asn Lys Ala
1               5                   10                  15
Asp Phe Phe Ser Ala Ser Arg Glu Leu Gly Val Val Glu Phe Ile Ser
                20                  25                  30
Lys Lys Cys Phe Ile Thr Thr Glu Gln Gly His Arg Phe Val Glu Cys
            35                  40                  45
Leu Lys Val Phe Asp His Leu Glu Ala Glu Tyr Ser Leu Glu Ala Leu
        50                  55                  60
Glu Phe Val Lys Asp Glu Ser Val Ser Val Glu Asp Ile Val Ser Glu
65                  70                  75                  80
Val Leu Thr Leu Asn Lys Glu Ile Lys Gly Leu Leu Glu Thr Val Lys
                85                  90                  95
Ala Leu Arg Lys Glu Ile Val Arg Val Lys Pro Leu Gly Ala Phe Ser
            100                 105                 110
Ser Ser Glu Ile Ala Glu Leu Ser Arg Lys Thr Gly Ile Ser Leu Arg
            115                 120                 125
Phe Phe Tyr Arg Thr His Lys Asp Asn Glu Asp Leu Glu Glu Asp Ser
        130                 135                 140
Pro Asn Val Phe Tyr Leu Ser Thr Ala Tyr Asn Phe Asp Tyr Tyr Leu
145                 150                 155                 160
Val Leu Gly Val Val Asp Leu Pro Arg Asp Arg Tyr Thr Glu Ile Glu
                165                 170                 175
Ala Pro Arg Ser Val Asn Glu Leu Gln Val Asp Leu Ala Asn Leu Gln
            180                 185                 190
Arg Glu Ile Arg Asn Arg Ser Asp Arg Leu Cys Asp Leu Tyr Ala Tyr
            195                 200                 205
Arg Arg Glu Val Leu Arg Gly Leu Cys Asn Tyr Asp Asn Glu Gln Arg
        210                 215                 220
Leu His Gln Ala Lys Glu Cys Cys Glu Asp Leu Phe Asp Gly Lys Val
225                 230                 235                 240
Phe Ala Val Ala Gly Trp Val Ile Val Asp Arg Ile Lys Glu Leu Gln
                245                 250                 255
Ser Leu Cys Asn Arg Tyr Gln Ile Tyr Met Glu Arg Val Pro Val Asp
            260                 265                 270
Pro Asp Glu Thr Ile Pro Thr Tyr Leu Glu Asn Lys Gly Val Gly Met
            275                 280                 285
Met Gly Glu Asp Leu Val Gln Ile Tyr Asp Thr Pro Ala Tyr Ser Asp
        290                 295                 300
Lys Asp Pro Ser Thr Trp Val Phe Phe Ala Phe Val Leu Phe Phe Ser
305                 310                 315                 320
Met Ile Val Asn Asp Ala Gly Tyr Gly Leu Leu Phe Leu Met Ser Ser
                325                 330                 335
Leu Leu Phe Ser Trp Lys Phe Arg Arg Lys Met Lys Phe Ser Lys His
            340                 345                 350
Leu Ser Arg Met Leu Lys Met Thr Ala Ile Leu Gly Leu Gly Cys Ile
        355                 360                 365
Cys Trp Gly Thr Thr Thr Thr Ser Phe Phe Gly Met Ser Phe Ser Lys
    370                 375                 380
Thr Ser Val Phe Arg Glu Tyr Ser Met Thr His Val Leu Ala Leu Lys
385                 390                 395                 400
Lys Ala Glu Tyr Tyr Leu Gln Met Arg Pro Lys Ala Tyr Lys Glu Leu
                405                 410                 415
Thr Asn Glu Tyr Pro Ser Leu Lys Ala Ile Arg Asp Pro Lys Ala Phe
            420                 425                 430
Leu Leu Ala Thr Glu Ile Gly Ser Ala Gly Ile Glu Ser Arg Tyr Val
        435                 440                 445
Val Tyr Asp Lys Phe Ile Asp Asn Ile Leu Met Glu Leu Ala Leu Phe
    450                 455                 460
Ile Gly Val Val His Leu Ser Leu Gly Met Leu Arg Tyr Leu Arg Tyr
465                 470                 475                 480
```

```
Arg Tyr Ser Gly Ile Gly Trp Ile Leu Phe Met Val Ser Ala Tyr Leu
            485         490             495
Tyr Val Pro Ile Tyr Leu Gly Thr Val Ser Leu Ile His Tyr Leu Phe
            500         505             510
His Val Pro Tyr Glu Leu Gly Gly Gln Ile Gly Tyr Tyr Gly Met Phe
            515         520             525
Gly Gly Ile Gly Leu Ala Val Val Leu Ala Met Ile Gln Arg Ser Trp
    530             535             540
Arg Gly Val Glu Glu Ile Ile Ser Val Ile Gln Val Phe Ser Asp Val
545             550             555             560
Leu Ser Tyr Leu Arg Ile Tyr Ala Leu Gly Leu Ala Gly Ala Met Met
            565             570             575
Gly Ala Thr Phe Asn Gln Met Gly Ala Arg Leu Pro Met Leu Leu Gly
            580             585             590
Ser Ile Val Ile Leu Leu Gly His Ser Val Asn Ile Ile Leu Ser Ile
            595             600             605
Met Gly Gly Val Ile His Gly Leu Arg Leu Asn Phe Ile Glu Trp Tyr
    610             615             620
His Tyr Ser Phe Asp Gly Gly Gly Arg Pro Leu Arg Pro Leu Arg Lys
625             630             635             640
Ile Val Cys Ser Glu Asp Ala Glu Ala Ser Gly Ile His Leu Asp Asn
            645             650             655
Asn Ser Ile Val
            660


        <210> 94
        <211> 151
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 94
Arg Tyr Leu Lys Gly Ala His Glu Val Ser Met Ile Asp Met Ser Val
 1           5               10              15
Val Gly Pro Ala Leu Val Leu Gly Leu Ala Met Ile Gly Ser Ala Ile
            20              25              30
Gly Cys Gly Met Ala Gly Val Ala Ser His Ala Val Met Ser Arg Ile
            35              40              45
Asp Glu Gly His Gly Lys Leu Ile Gly Met Ser Ala Met Pro Ser Ser
    50              55              60
Gln Ser Ile Tyr Gly Phe Ile Leu Met Leu Leu Met Gln Ala Ala Ile
65              70              75              80
Lys Asn Gly Thr Leu Ser Pro Val Gly Gly Ile Ala Ile Gly Leu Ser
            85              90              95
Val Gly Ala Ala Leu Leu Val Ser Ser Val Met Gln Gly Lys Cys Cys
            100             105             110
Val Ser Gly Ile Gln Ala Tyr Ala Arg Ser Ser Ser Ile Tyr Gly Lys
            115             120             125
Cys Tyr Ala Ala Ile Gly Ile Val Glu Ser Phe Ser Leu Phe Ala Val
    130             135             140
Val Phe Ala Leu Leu Leu Leu
145             150


        <210> 95
        <211> 192
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 95
Cys Lys Ala Ser Val Val Ser Ala Glu Phe Lys Leu Met Leu Asp Leu
 1           5               10              15
```

421

Arg Gln Tyr Met Gly Ser Val Met Gln Arg Leu Gly Leu Ser Asn Leu
          20   25   30
Phe His Cys Leu Leu Leu Phe Leu Arg Tyr Tyr Tyr Ser Lys Leu Val
          35   40   45
Phe Gly Leu Thr Val Leu Leu Ala Ala Ile Ser Val Ile Cys Leu Leu
    50   55   60
Gly Cys Ser Glu Pro Ser Leu Ser Ser Phe Thr Glu Tyr Val Gly Pro
65   70   75   80
Glu Tyr Ser Ala Ala Ala Gln Leu Ser Ile Glu Gln Ser Cys His Asp
              85   90   95
Glu Val Tyr Gly Gln Gln Val Val Val Thr Trp Ser Leu Pro Ser Arg
          100   105   110
Met Arg Lys Cys Leu Pro Val Thr Leu Tyr Leu Trp Val Tyr Tyr Gly
          115   120   125
Asn Gly Lys Val Glu Lys Leu Thr Tyr Glu Val Asn Gln Ser Ala Gly
    130   135   140
Tyr Arg Val Tyr Cys Leu Lys Gly Leu Glu Tyr Lys Glu Leu Gln Gly
145   150   155   160
Ile Ile Ser Tyr Arg Val Ala Leu Cys Ser Gly Asn Gln Glu Ile Val
              165   170   175
Ser Arg Arg His His Leu Trp Met Glu Val Ile Ser Leu Asp Ser Pro
          180   185   190

          <210> 96
          <211> 956
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 96
Val Tyr Arg Val Phe Leu Ser Arg Asp His Lys Phe Gly Leu Arg Ile
1   5   10   15
Met Thr Thr Glu Asp Phe Pro Lys Ala Tyr Asn Phe Gln Asp Thr Glu
          20   25   30
Pro Glu Leu Tyr Val Phe Trp Glu Lys Asn Gly Met Phe Lys Ala Glu
          35   40   45
Ala Ser Ser Asp Lys Pro Pro Tyr Ser Val Ile Met Pro Pro Pro Asn
    50   55   60
Val Thr Gly Val Leu His Met Gly His Ala Leu Val Asn Thr Leu Gln
65   70   75   80
Asp Val Leu Val Arg Tyr Lys Arg Met Ser Gly Phe Glu Val Cys Trp
              85   90   95
Ile Pro Gly Thr Asp His Ala Gly Ile Ala Thr Gln Ala Val Val Glu
          100   105   110
Arg His Leu Gln Ala Ser Glu Gly Lys Arg Arg Thr Asp Tyr Ser Arg
          115   120   125
Glu Asp Phe Leu Lys His Ile Trp Ala Trp Lys Glu Lys Ser Glu Lys
          130   135   140
Val Val Leu Ser Gln Leu Arg Gln Leu Gly Cys Ser Cys Asp Trp Asp
145   150   155   160
Arg Lys Arg Phe Thr Met Glu Pro Leu Ala Asn Arg Ala Val Lys Lys
              165   170   175
Ala Phe Lys Thr Leu Phe Glu Asn Gly Tyr Ile Tyr Arg Gly Tyr Tyr
              180   185   190
Leu Val Asn Trp Asp Pro Val Leu Gln Thr Ala Leu Ala Asp Asp Glu
          195   200   205
Val Glu Tyr Glu Glu Lys Asp Gly Trp Leu Tyr Tyr Ile Arg Tyr Arg
    210   215   220
Met Val Gly Ser Gln Glu Ser Ile Val Val Ala Thr Thr Arg Pro Glu
225   230   235   240
Thr Ser Leu Gly Asp Thr Gly Ile Ala Val Ser Pro Asn Asp Glu Arg
              245   250   255

          422

```
Tyr Ala Ser Trp Ile Gly Ala Ser Val Glu Val Pro Phe Val Asn Arg
            260             265             270
Gln Ile Pro Ile Ile Gly Asp Ala Ser Val Asp Pro Thr Phe Gly Thr
            275             280             285
Gly Ala Val Lys Val Thr Pro Ala His Asp Lys Asp Asp Tyr Leu Met
305             295             300
Gly Thr Asn His His Leu Pro Met Ile Asn Ile Leu Thr Pro Ser Gly
305             310             315             320
Gly Ile Asn Glu Asn Gly Gly Pro Phe Ala Gly Met Ala Lys Glu Lys
            325             330             335
Ala Arg Glu Glu Ile Leu Ile Ala Leu Glu Glu Gln Gly Leu Phe Val
            340             345             350
Arg Lys Glu Pro Tyr Lys Leu Arg Val Gly Val Ser Tyr Arg Ser Gly
            355             360             365
Ala Val Ile Glu Pro Tyr Leu Ser Lys Gln Trp Phe Val Ser Val Ser
            370             375             380
Glu Phe Arg Gly Ala Leu Arg Glu Phe Val Glu Ser Gln Asp Ile Lys
385             390             395             400
Ile Phe Pro Lys Asp Phe Val Lys Asn Tyr Leu Ser Trp Val Asn His
            405             410             415
Leu Arg Asp Trp Cys Ile Ser Arg Gln Leu Trp Trp Gly His Arg Ile
            420             425             430
Pro Val Trp Tyr His Lys Asn Asp Asp Glu Arg Val Leu Cys Tyr Asp
            435             440             445
Gly Glu Gly Ile Pro Glu Glu Val Ala Gln Asp Pro Asp Ser Trp Tyr
            450             455             460
Gln Asp Pro Asp Val Leu Asp Thr Trp Phe Ser Ser Gly Leu Trp Pro
465             470             475             480
Leu Thr Cys Leu Gly Trp Pro Asp Glu Asn Ser Pro Asp Leu Lys Lys
            485             490             495
Phe Tyr Pro Thr Ala Leu Leu Val Thr Gly His Asp Ile Leu Phe Phe
            500             505             510
Trp Val Thr Arg Met Val Leu Leu Cys Ser Ser Met Ser Gly Glu Lys
            515             520             525
Pro Phe Ser Glu Val Phe Leu His Gly Leu Ile Phe Gly Lys Ser Tyr
            530             535             540
Lys Arg Tyr Asn Asp Phe Gly Glu Trp Ser Tyr Ile Ser Gly Lys Glu
545             550             555             560
Lys Leu Ala Tyr Asp Met Gly Glu Ala Leu Pro Asp Gly Val Val Ala
            565             570             575
Lys Trp Glu Lys Leu Ser Lys Ser Lys Gly Asn Val Ile Asp Pro Leu
            580             585             590
Glu Met Ile Ala Thr Tyr Gly Thr Asp Ala Val Arg Leu Thr Leu Cys
            595             600             605
Ser Cys Ala Asn Arg Gly Glu Gln Ile Asp Leu Asp Tyr Arg Leu Phe
            610             615             620
Glu Glu Tyr Lys His Phe Ala Asn Lys Val Trp Asn Gly Ala Arg Phe
625             630             635             640
Ile Phe Gly His Ile Ser Asp Leu Gln Gly Lys Asp Leu Leu Ala Gly
            645             650             655
Ile Asp Glu Asp Ser Leu Gly Leu Glu Asp Phe Tyr Ile Leu Asp Gly
            660             665             670
Phe Asn Gln Leu Ile His Gln Leu Glu Glu Ala Tyr Ala Thr Tyr Ala
            675             680             685
Phe Asp Lys Val Ala Thr Leu Ala Tyr Glu Phe Phe Arg Asn Asp Leu
            690             695             700
Cys Ser Thr Tyr Ile Glu Ile Ile Lys Pro Thr Leu Phe Gly Lys Gln
705             710             715             720
Gly Asn Glu Ala Ser Gln Ser Thr Lys Arg Thr Leu Leu Ala Val Leu
            725             730             735
```

```
Leu Ile Asn Val Leu Gly Val Leu His Pro Val Ala Pro Phe Ile Thr
            740             745             750
Glu Ser Leu Phe Leu Arg Ile Gln Asp Thr Leu Gly Ala Leu Pro Glu
        755             760             765
Gly Asp Gly Asp Ala Phe Thr Gly His Ala Leu Arg Met Leu Arg Ser
    770             775             780
Arg Ala Cys Met Glu Ala Pro Tyr Pro Lys Ala Phe Asp Val Lys Ile
785             790             795             800
Pro Gln Asp Leu Arg Glu Ser Phe Thr Leu Ala Gln Arg Leu Val Tyr
            805             810             815
Thr Ile Arg Asn Ile Arg Gly Glu Met Gln Leu Asp Pro Arg Leu His
            820             825             830
Leu Lys Ala Phe Val Val Cys Ser Asp Thr Thr Glu Ile Gln Ser Cys
        835             840             845
Ile Pro Ile Leu Gln Ala Leu Gly Gly Leu Glu Ser Ile Gln Leu Leu
    850             855             860
Asp Lys Glu Pro Glu Lys Gly Leu Tyr Ser Phe Gly Val Val Asp Thr
865             870             875             880
Ile Arg Leu Gly Ile Phe Val Pro Glu Glu His Leu Leu Lys Glu Lys
            885             890             895
Gly Arg Leu Glu Lys Glu Arg Val Arg Leu Glu Arg Ala Val Glu Asn
            900             905             910
Leu Glu Arg Leu Leu Gly Asp Glu Ser Phe Cys Gln Lys Ala Asn Pro
        915             920             925
Asn Leu Val Val Ala Lys Gln Glu Ala Leu Lys Asn Asn Arg Ile Glu
    930             935             940
Leu Gln Gly Ile Leu Asp Lys Leu Ala Ser Phe Ala
945             950             955
```

        <210> 97
        <211> 945
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 97
```
Ala Cys Ile Val Cys Leu Asp Arg Glu Asp Gln Arg Ser Leu Glu Arg
 1           5              10             15
Tyr Asp Ile Val Arg Ile Ile Gly Lys Gly Gly Met Gly Glu Val Tyr
        20             25             30
Leu Ala Tyr Asp Pro Val Cys Ser Arg Lys Val Ala Leu Lys Lys Ile
        35             40             45
Arg Glu Asp Leu Ala Glu Asn Pro Leu Leu Lys Arg Arg Phe Leu Arg
    50             55             60
Glu Ala Arg Ile Ala Ala Asp Leu Ile His Pro Gly Val Val Pro Val
65             70             75             80
Tyr Thr Ile Tyr Ser Glu Lys Asp Pro Val Tyr Tyr Thr Met Pro Tyr
            85             90             95
Ile Glu Gly Tyr Thr Leu Lys Thr Leu Leu Lys Ser Val Trp Gln Lys
            100            105            110
Glu Ser Leu Ser Lys Glu Leu Ala Glu Lys Thr Ser Val Gly Ala Phe
        115            120            125
Leu Ser Ile Phe His Lys Ile Cys Cys Thr Ile Glu Tyr Val His Ser
    130            135            140
Arg Gly Ile Leu His Arg Asp Leu Lys Pro Asp Asn Ile Leu Leu Gly
145            150            155            160
Leu Phe Ser Glu Ala Val Ile Leu Asp Trp Gly Ala Ala Val Ala Cys
            165            170            175
Gly Glu Glu Glu Asp Leu Leu Asp Ile Asp Val Ser Lys Glu Glu Val
            180            185            190
Leu Ser Ser Arg Met Thr Ile Pro Gly Arg Ile Val Gly Thr Pro Asp
        195            200            205
```

424

```
Tyr Met Ala Pro Glu Arg Leu Leu Gly His Pro Ala Ser Lys Ser Thr
    210                 215             220
Asp Ile Tyr Ala Leu Gly Val Val Leu Tyr Gln Met Leu Thr Leu Ser
225                 230             235                 240
Phe Pro Tyr Arg Arg Lys Lys Gly Lys Lys Ile Val Leu Asp Gly Gln
            245             250             255
Arg Ile Pro Ser Pro Gln Glu Val Ala Pro Tyr Arg Glu Ile Pro Pro
            260             265             270
Phe Leu Ser Ala Val Val Met Arg Met Leu Ala Val Asp Pro Gln Glu
        275             280             285
Arg Tyr Ser Ser Val Thr Glu Leu Lys Glu Asp Ile Glu Ser His Leu
    290             295             300
Lys Gly Ser Pro Lys Trp Thr Leu Thr Thr Ala Leu Pro Pro Lys Lys
305             310             315                 320
Ser Ser Ser Trp Lys Leu Asn Glu Pro Ile Leu Leu Ser Lys Tyr Phe
            325             330             335
Pro Met Leu Glu Val Ser Pro Ala Ser Trp Tyr Ser Leu Ala Ile Ser
            340             345             350
Asn Ile Glu Ser Phe Ser Glu Met Arg Leu Glu Tyr Thr Leu Ser Lys
    355             360             365
Lys Gly Leu Asn Glu Gly Phe Gly Ile Leu Leu Pro Thr Ser Glu Asn
    370             375             380
Ala Leu Gly Gly Asp Phe Tyr Gln Gly Tyr Gly Phe Trp Leu His Ile
385             390             395                 400
Lys Glu Arg Thr Leu Ser Val Ser Leu Val Lys Asn Ser Leu Glu Ile
            405             410             415
Gln Arg Cys Ser Gln Asp Leu Glu Ser Asp Lys Glu Thr Phe Leu Ile
            420             425             430
Ala Leu Glu Gln His Asn His Ser Leu Ser Leu Phe Val Asp Gly Thr
            435             440             445
Thr Trp Leu Ile His Met Asn Tyr Leu Pro Ser Arg Ser Gly Arg Val
    450             455             460
Ala Ile Ile Val Arg Asp Met Glu Asp Ile Leu Glu Asp Ile Gly Ile
465             470             475                 480
Phe Glu Ser Ser Gly Ser Leu Arg Val Ser Cys Leu Ala Val Pro Asp
            485             490             495
Ala Phe Leu Ala Glu Lys Leu Tyr Asp Arg Ala Leu Val Leu Tyr Arg
            500             505             510
Arg Ile Ala Glu Ser Phe Pro Gly Arg Lys Glu Gly Tyr Glu Ala Arg
    515             520             525
Phe Arg Ala Gly Ile Thr Val Leu Glu Lys Ala Ser Thr Asp Asn Asn
    530             535             540
Glu Gln Glu Phe Ala Leu Ala Ile Glu Glu Phe Ser Lys Leu His Asp
545             550             555                 560
Gly Val Ala Ala Pro Leu Glu Tyr Leu Gly Lys Ala Leu Val Tyr Gln
            565             570             575
Arg Leu Gln Glu Tyr Asn Glu Glu Ile Lys Ser Leu Leu Leu Ala Leu
        580             585             590
Lys Arg Tyr Ser Gln His Pro Glu Ile Phe Arg Leu Lys Asp His Val
    595             600             605
Val Tyr Arg Leu His Glu Ser Phe Tyr Lys Arg Asp Arg Leu Ala Leu
    610             615             620
Val Phe Met Ile Leu Val Leu Glu Ile Ala Pro Gln Ala Ile Thr Pro
625             630             635                 640
Gly Gln Glu Glu Lys Ile Leu Val Trp Leu Lys Asp Lys Ser Arg Ala
            645             650             655
Thr Leu Phe Cys Leu Leu Asp Pro Thr Val Leu Glu Leu Arg Ser Ser
            660             665             670
Lys Met Glu Leu Phe Leu Ser Tyr Trp Ser Gly Phe Ile Pro His Leu
    675             680             685
```

```
Asn Ser Leu Phe His Arg Ala Trp Asp Gln Ser Asp Val Arg Ala Leu
    690             695         700
Ile Glu Ile Phe Tyr Val Ala Cys Asp Leu His Lys Trp Gln Phe Leu
705             710         715                 720
Ser Ser Cys Ile Asp Ile Phe Lys Glu Ser Leu Glu Asp Gln Lys Ala
            725             730             735
Thr Glu Glu Ile Val Glu Phe Ser Phe Glu Asp Leu Gly Ala Phe Leu
            740             745             750
Phe Ala Ile Gln Ser Ile Phe Asn Lys Glu Asp Ala Glu Lys Ile Phe
        755             760             765
Val Ser Asn Asp Gln Leu Ser Pro Ile Leu Leu Val Tyr Ile Phe Asp
    770             775             780
Leu Phe Ala Asn Arg Ala Leu Leu Glu Ser Gln Gly Glu Ala Ile Phe
785             790             795                 800
Gln Ala Leu Asp Leu Ile Arg Ser Lys Val Pro Glu Asn Phe Tyr His
            805             810             815
Asp Tyr Leu Arg Asn His Glu Ile Arg Ala His Leu Trp Cys Arg Asn
            820             825             830
Glu Lys Ala Leu Ser Thr Ile Phe Glu Asn Tyr Thr Glu Lys Gln Leu
        835             840             845
Lys Asp Glu Gln His Glu Leu Phe Val Leu Tyr Gly Cys Tyr Leu Ala
    850             855             860
Leu Ile Gln Gly Ala Glu Ala Ala Lys Gln His Phe Asp Val Cys Arg
865             870             875                 880
Glu Asp Arg Ile Phe Pro Ala Ser Leu Leu Ala Arg Asn Tyr Asn Arg
            885             890             895
Leu Gly Leu Pro Lys Asp Ala Leu Ser Tyr Gln Glu Arg Arg Leu Leu
            900             905             910
Leu Arg Gln Lys Phe Leu Tyr Phe His Cys Leu Gly Asn His Asp Glu
    915             920             925
Arg Asp Leu Cys Gln Thr Met Tyr His Leu Leu Thr Glu Glu Phe Gln
930             935             940
Leu
945

        <210> 98
        <211> 1837
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 98
Glu Thr Phe Leu Ser Ile Leu Arg Glu Phe Phe Met Lys Ser Leu Pro
 1           5             10              15
Val Tyr Val Ser Gly Ile Lys Val Arg Asn Leu Lys Asn Val Ser Ile
            20          25              30
His Phe Asn Ser Glu Glu Ile Val Leu Leu Thr Gly Val Ser Gly Ser
        35              40              45
Gly Lys Ser Ser Ile Ala Phe Asp Thr Leu Tyr Ala Ala Gly Arg Lys
    50              55              60
Arg Tyr Ile Ser Thr Leu Pro Thr Phe Phe Ala Thr Thr Ile Thr Thr
65              70              75                  80
Leu Pro Asn Pro Lys Val Glu Glu Ile His Gly Leu Ser Pro Thr Ile
            85              90              95
Ala Ile Lys Gln Asn His Phe Ser His Tyr Ser His Ala Thr Val Gly
            100             105             110
Ser Thr Thr Glu Leu Phe Ser His Leu Ala Leu Leu Phe Thr Leu Glu
    115             120             125
Gly Gln Ala Arg Asp Pro Lys Thr Lys Glu Val Leu Asp Leu Tyr Ser
    130             135             140
Lys Glu Lys Val Leu Ser Thr Ile Met Glu Leu Ser Glu Gly Val Gln
145             150             155                 160
```

Ile Ser Ile Leu Ala Pro Leu Leu Arg Lys Asp Ile Ala Ala Ile His
                    165   170   175
Glu Tyr Ala Gln Gln Gly Phe Thr Lys Val Arg Cys Asn Gly Thr Ile
            180   185   190
His Pro Ile Tyr Ser Phe Leu Thr Ser Gly Ile Pro Glu Asp Cys Ser
        195   200   205
Val Asp Ile Val Ile Asp Thr Leu Ile Lys Ser Glu Asn Asn Ile Ala
    210   215   220
Arg Leu Lys Val Ser Leu Phe Thr Ala Leu Glu Phe Gly Glu Gly His
225   230   235   240
Cys Ser Val Leu Ser Asp Glu Glu Leu Met Thr Phe Ser Thr Lys Gln
                245   250   255
Gln Ile Asp Asp Val Thr Tyr Thr Pro Leu Thr Gln Gln Leu Phe Ser
            260   265   270
Pro His Ala Leu Glu Ser Arg Cys Ser Leu Cys Gln Gly Ser Gly Ile
        275   280   285
Phe Ile Ser Ile Asp Asn Pro Leu Leu Ile Asp Glu Asn Leu Ser Ile
    290   295   300
Lys Glu Asn Cys Cys Ser Phe Ala Gly Asn Cys Ser Ser Tyr Leu Tyr
305   310   315   320
His Thr Ile Tyr Gln Ala Leu Ala Asp Ala Leu Asn Phe Asn Leu Glu
            325   330   335
Thr Pro Trp Lys Asp Leu Ser Pro Glu Ile Gln Asn Ile Phe Leu Arg
            340   345   350
Gly Lys Asn Asn Leu Val Leu Pro Val Arg Leu Phe Asp Gln Thr Leu
            355   360   365
Gly Lys Lys Asn Leu Thr Tyr Lys Val Trp Arg Gly Val Leu Asn Asp
    370   375   380
Ile Gly Asp Lys Val Arg Tyr Thr Thr Lys Pro Ser Arg Tyr Leu Ser
385   390   395   400
Lys Gly Met Ser Ala His Ser Cys Ser Leu Cys Lys Gly Thr Gly Leu
                405   410   415
Gly Asp Tyr Ala Ser Val Ala Thr Trp Glu Gly Lys Thr Phe Thr Glu
            420   425   430
Phe Gln Gln Met Ser Leu Asn Asn Trp His Val Phe Phe Ser Lys Val
            435   440   445
Lys Ser Pro Ser Leu Ser Ile Gln Glu Ile Leu Gln Gly Leu Lys Gln
    450   455   460
Arg Leu Ser Phe Leu Ile Asp Leu Gly Leu Gly Tyr Leu Thr Pro Asn
465   470   475   480
Arg Ala Leu Ala Thr Leu Ser Gly Gly Glu Gln Glu Arg Thr Ala Ile
                485   490   495
Ala Lys His Leu Gly Gly Glu Leu Phe Gly Ile Thr Tyr Ile Leu Asp
            500   505   510
Glu Pro Ser Ile Gly Leu His Pro Gln Asp Thr Glu Lys Leu Ile Gly
            515   520   525
Val Ile Lys Lys Leu Arg Asp Gln Gly Asn Thr Val Ile Leu Val Glu
    530   535   540
His Glu Glu Arg Met Ile Ser Leu Ala Asp Arg Ile Ile Asp Ile Gly
545   550   555   560
Pro Gly Ala Gly Ile Phe Gly Gly Glu Val Leu Phe Asn Gly Lys Pro
            565   570   575
Glu Asp Phe Leu Met Asn Ser Ser Ser Leu Thr Ala Lys Tyr Leu Arg
            580   585   590
Gln Glu Leu Thr Ile Pro Ile Pro Glu Ser Arg Glu Ala Pro Thr Ser
            595   600   605
Trp Leu Leu Leu Thr Glu Ala Thr Ile His Asn Leu Lys Asn Leu Ser
610   615   620
Ile Arg Leu Pro Leu Ala Arg Leu Ile Gly Val Thr Gly Val Ser Gly
625   630   635   640

Ser Gly Lys Ser Ser Leu Ile Asn Asn Thr Leu Val Pro Ala Ile Glu
645 650 655
Ser Phe Leu Lys Gln Glu Asn Pro Lys Asn Leu His Phe Glu Trp Gly
660 665 670
Cys Ile Gly Arg Leu Ile His Ile Thr Arg Asp Leu Pro Gly Arg Ser
675 680 685
Gln Arg Ser Ile Pro Leu Thr Tyr Ile Lys Ala Phe Asp Asp Ile Arg
690 695 700
Glu Leu Phe Ala Ser Gln Pro Arg Ser Leu Arg Gln Gly Leu Thr Lys
705 710 715 720
Ala His Phe Ser Phe Asn Gln Pro Gln Gly Ala Cys Ile Gln Cys Gln
725 730 735
Gly Leu Gly Thr Met Thr Ile Ser Asp Asp Thr Pro Ile Pro Cys
740 745 750
Ser Glu Cys Gln Gly Lys Arg Tyr His Ser Glu Val Leu Glu Ile Leu
755 760 765
Tyr Glu Gly Lys Asn Ile Ala Asp Ile Leu Asp Met Thr Ala Tyr Glu
770 775 780
Ala Glu Lys Phe Phe Ile Ser His Pro Lys Ile His Glu Lys Ile His
785 790 795 800
Ala Leu Cys Ser Leu Arg Leu Asp Tyr Leu Pro Leu Gly Arg Pro Leu
805 810 815
Ser Thr Leu Ser Gly Gly Glu Ile Gln Arg Leu Lys Leu Ala His Glu
820 825 830
Leu Leu Phe Ala Ser Pro Lys Gln Thr Leu Tyr Val Leu Asp Glu Pro
835 840 845
Thr Thr Gly Leu His Thr His Asp Ile Gln Ala Leu Ile Glu Val Leu
850 855 860
Leu Ser Leu Thr Tyr Leu Gly His Thr Val Leu Val Ile Glu His Asn
865 870 875 880
Met His Val Val Lys Val Cys Asp Tyr Val Leu Glu Leu Gly Pro Glu
885 890 895
Gly Gly Asp Leu Gly Gly Tyr Leu Leu Ala Ser Cys Thr Pro Lys Asp
900 905 910
Leu Ile Gln Leu Asn Thr Pro Thr Ala Lys Ala Leu Ala Pro Tyr Ile
915 920 925
Glu Gly Ser Leu Asp Ile Pro Val Val Lys Ser Glu Pro Pro Ser Ser
930 935 940
Pro Lys Ser Cys Asp Ile Leu Ile Lys Asp Ala Tyr Gln Asn Asn Leu
945 950 955 960
Lys His Ile Asp Leu Ala Leu Pro Arg Asn Ser Leu Ile Ala Ile Ala
965 970 975
Gly Pro Gly Ala Ser Gly Lys His Ser Leu Val Phe Asp Ile Leu Tyr
980 985 990
Ala Ser Gly Asn Ile Ala Tyr Ala Glu Leu Phe Pro Pro Tyr Ile Arg
995 1000 1005
Gln Gly Leu Leu Lys Glu Thr Pro Leu Pro Ser Val Gly Glu Val Lys
1010 1015 1020
Gly Leu Ser Pro Val Ile Ser Val Arg Lys Cys Ser Ser Ser Asn Arg
1025 1030 1035 1040
Ser Tyr His Thr Ile Ala Ser Ala Leu Gly Leu Ser Asn Gly Leu Glu
1045 1050 1055
Lys Leu Phe Ala Ile Leu Gly Glu Pro Phe Ser Pro Leu Thr Glu Glu
1060 1065 1070
Lys Leu Ser Lys Thr Thr Pro Gln Thr Ile Ile Asp Ser Leu Leu Lys
1075 1080 1085
Ser Tyr Lys Asp Asp Tyr Val Thr Ile Thr Ser Pro Ile Pro Leu Gly
1090 1095 1100
Ser Asp Leu Glu Ile Phe Leu Gln Glu Lys Gln Lys Glu Gly Phe Ile
1105 1110 1115 1120

428

```
Lys Leu Tyr Ser Glu Gly Asn Leu Tyr Asp Leu Asp Glu Arg Leu Pro
          1125                      1130                    1135
Leu Asn Leu Ile Glu Pro Ala Ile Val Ile Gln His Thr Lys Val Ser
          1140                  1145                  1150
Pro Lys Asn Ser Ser Ser Leu Leu Ser Ala Ile Ser Val Ala Phe Ser
          1155                  1160                  1165
Leu Ser Ser Glu Ile Trp Ile Tyr Ile Ser Gln Lys Lys Gln Arg Lys
      1170                  1175                  1180
Leu Ser Tyr Ser Leu Gly Trp Lys Asp Lys Lys Gly Arg Leu Tyr Pro
1185                  1190                  1195                  1200
Glu Ile Thr His Gln Leu Leu Ser Ser Asp His Pro Glu Gly Arg Cys
          1205                      1210                    1215
Leu Thr Cys Gly Gly Arg Gly Glu Ile Leu Lys Ile Ser Leu Glu Glu
          1220                  1225                  1230
His Lys Glu Lys Ile Ala His Tyr Thr Pro Leu Glu Phe Phe Ser Leu
          1235                  1240                  1245
Phe Phe Pro Lys Ser Tyr Met Lys Pro Val Gln Lys Leu Leu Lys Asp
1250                  1255                  1260
Glu Asn Ala Ser Gln Pro Leu Lys Leu Leu Thr Thr Lys Glu Phe Leu
1265                  1270                  1275                  1280
Asn Phe Cys Arg Gly Ser Ser Glu Phe Pro Gly Met Asn Ala Leu Leu
              1285                  1290                  1295
Met Glu Gln Leu Asp Thr Glu Ser Asp Ser Pro Leu Ile Lys Pro Leu
          1300                  1305                  1310
Leu Ala Leu Thr Ser Cys Pro Ala Cys Lys Gly Ser Gly Leu Asn Asp
          1315                  1320                  1325
Tyr Ala Asn Tyr Val Arg Ile Asn Asn Thr Ser Leu Leu Asp Ile Tyr
      1330                  1335                  1340
Gln Glu Asp Ala Thr Phe Leu Glu Ser Phe Leu Asn Thr Ile Gly Thr
1345                  1350                  1355                  1360
Asp Asp Thr Arg Ser Ile Ile Gln Asp Leu Met Asn Arg Leu Thr Phe
              1365                  1370                  1375
Ile Ser Lys Val Gly Leu Ser Tyr Ile Thr Leu Gly Gln Arg Gln Asp
          1380                  1385                  1390
Thr Leu Ser Asp Gly Glu Asn Tyr Arg Leu His Leu Ala Lys Lys Ile
          1395                  1400                  1405
Ser Ile Asn Leu Thr Asn Ile Val Tyr Leu Phe Glu Glu Pro Leu Ser
      1410                  1415                  1420
Gly Leu His Pro Gln Asp Leu Pro Thr Ile Val Gln Leu Leu Lys Glu
1425                  1430                  1435                  1440
Leu Val Ala Asn Asn Asn Thr Val Ile Ala Thr Asp Arg Ser Cys Ser
              1445                  1450                  1455
Leu Ile Pro His Ala Asp His Ala Ile Phe Leu Gly Pro Gly Ser Gly
          1460                  1465                  1470
Pro Gln Gly Gly Phe Leu Met Asp Ser Asp Thr Glu Val Cys Pro Ser
          1475                  1480                  1485
Val Asp Leu His Ala Asn Val Pro Gln Thr Glu Val Cys Pro Lys Ala
      1490                  1495                  1500
Pro Leu Ser Ile Ser Lys Ala Asn His Thr Arg Gly Ser Asp Arg Thr
1505                  1510                  1515                  1520
Leu Lys Val Asn Leu Ser Ile His His Ile Gln Asn Leu Lys Val Ser
              1525                  1530                  1535
Ala Pro Leu His Ala Leu Val Ala Ile Gly Gly Val Ser Gly Ser Gly
          1540                  1545                  1550
Lys Thr Ser Leu Leu Leu Glu Gly Phe Lys Lys Gln Ala Glu Leu Leu
          1555                  1560                  1565
Ile Ala Lys Gly Thr Thr Thr Phe Ser Asp Leu Val Val Ile Asp Ser
      1570                  1575                  1580
His Pro Ile Ala Ser Ser Gln Arg Ser Asp Ile Ser Thr Tyr Phe Asp
1585                  1590                  1595                  1600
```

```
Ile Ala Pro Ser Leu Arg Ala Phe Tyr Ala Ser Leu Thr Gln Ala Lys
              1605                1610                1615
Ala Leu Asn Ile Ser Ser Thr Met Phe Ser Thr Asn Thr Lys Gln Gly
              1620                1625            1630
Gln Cys Ser Asp Cys Gln Gly Leu Gly Tyr Gln Trp Ile Asp Arg Ala
              1635            1640                1645
Phe Tyr Ala Leu Glu Lys Arg Pro Cys Pro Thr Cys Ser Gly Phe Arg
      1650                1655                1660
Ile Gln Pro Leu Ala Gln Glu Val Leu Tyr Glu Gly Lys His Phe Gly
1665                1670                1675                1680
Glu Leu Leu His Thr Pro Ile Glu Thr Val Ala Leu Arg Phe Pro Phe
              1685                1690                1695
Ile Lys Lys Ile Gln Lys Pro Leu Lys Ala Leu Leu Asp Ile Gly Leu
              1700                1705                1710
Gly Tyr Leu Pro Ile Gly Gln Lys Leu Ser Ser Leu Ser Val Ser Glu
      1715                1720                1725
Lys Thr Ala Leu Lys Thr Ala Tyr Phe Leu Tyr Gln Thr Pro Glu Thr
      1730                1735                1740
Pro Thr Leu Phe Leu Ile Asp Glu Leu Phe Ser Ser Leu Asp Pro Ile
1745                1750                1755                1760
Lys Lys Gln His Leu Pro Glu Lys Leu Arg Ser Leu Ile Asn Ser Gly
              1765                1770                1775
His Ser Val Ile Tyr Ile Asp His Asp Val Lys Leu Leu Lys Ser Ala
              1780                1785                1790
Asp Tyr Leu Ile Glu Ile Gly Pro Gly Ser Gly Lys Gln Gly Gly Lys
      1795                1800                1805
Leu Leu Phe Ser Gly Ser Pro Lys Asp Ile Tyr Ala Ser Lys Asp Ser
      1810                1815                1820
Leu Leu Lys Lys Tyr Ile Cys Asn Glu Glu Leu Asp Ser
1825                1830                1835
```

        <210> 99
        <211> 486
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 99
```
Asp Ser Met Ile Thr Arg Thr Lys Ile Ile Cys Thr Ile Gly Pro Ala
1                 5                 10                15
Thr Asn Ser Pro Glu Met Leu Ala Lys Leu Leu Asp Ala Gly Met Asn
              20                25                30
Val Ala Arg Leu Asn Phe Ser His Gly Ser His Glu Thr His Gly Gln
      35                40                45
Ala Ile Gly Phe Leu Lys Glu Leu Arg Glu Gln Lys Arg Val Pro Leu
      50                55                60
Ala Ile Met Leu Asp Thr Lys Gly Pro Glu Ile Arg Leu Gly Asn Ile
65                70                75                80
Pro Gln Pro Ile Ser Val Ser Gln Gly Gln Lys Leu Arg Leu Val Ser
              85                90                95
Ser Asp Ile Asp Gly Ser Ala Glu Gly Gly Val Ser Leu Tyr Pro Lys
              100               105               110
Gly Ile Phe Pro Phe Val Pro Glu Gly Ala Asp Val Leu Ile Asp Asp
      115               120               125
Gly Tyr Ile His Ala Val Val Val Ser Ser Glu Ala Asp Ser Leu Glu
      130               135               140
Leu Glu Phe Met Asn Ser Gly Leu Leu Lys Ser His Lys Ser Leu Ser
145               150               155               160
Ile Arg Gly Val Asp Val Ala Leu Pro Phe Met Thr Glu Lys Asp Ile
              165               170               175
Ala Asp Leu Lys Phe Gly Val Glu Gln Asn Met Asp Val Val Ala Ala
              180               185               190
```

                                    430

```
Ser Phe Val Arg Tyr Gly Glu Asp Ile Glu Thr Met Arg Lys Cys Leu
        195                 200             205
Ala Asp Leu Gly Asn Pro Lys Met Pro Ile Ile Ala Lys Ile Glu Asn
    210                 215             220
Arg Leu Gly Val Glu Asn Phe Ser Lys Ile Ala Lys Leu Ala Asp Gly
225                 230             235                 240
Ile Met Ile Ala Arg Gly Asp Leu Gly Ile Glu Leu Ser Val Val Glu
                245             250             255
Val Pro Asn Leu Gln Lys Met Met Ala Lys Val Ser Arg Glu Thr Gly
            260             265             270
His Phe Cys Val Thr Ala Thr Gln Met Leu Glu Ser Met Ile Arg Asn
            275             280             285
Val Leu Pro Thr Arg Ala Glu Val Ser Asp Ile Ala Asn Ala Ile Tyr
    290             295             300
Asp Gly Ser Ser Ala Val Met Leu Ser Gly Glu Thr Ala Ser Gly Ala
305             310             315                 320
His Pro Val Ala Ala Val Lys Ile Met Arg Ser Val Ile Leu Glu Thr
                325             330             335
Glu Lys Asn Leu Ser His Asp Ser Phe Leu Lys Leu Asp Asp Ser Asn
            340             345             350
Ser Ala Leu Gln Val Ser Pro Tyr Leu Ser Ala Ile Gly Leu Ala Gly
    355                 360             365
Ile Gln Ile Ala Glu Arg Ala Asp Ala Lys Ala Leu Ile Val Tyr Thr
    370             375             380
Glu Ser Gly Ser Ser Pro Met Phe Leu Ser Lys Tyr Arg Pro Lys Phe
385                 390             395                 400
Pro Ile Ile Ala Val Thr Pro Ser Thr Ser Val Tyr Tyr Arg Leu Ala
                405             410             415
Leu Glu Trp Gly Val Tyr Pro Met Leu Thr Gln Glu Ser Asp Arg Ala
            420             425             430
Val Trp Arg His Gln Ala Cys Ile Tyr Gly Ile Glu Gln Gly Ile Leu
        435             440             445
Ser Asn Tyr Asp Arg Ile Leu Val Leu Ser Arg Gly Ala Cys Met Glu
    450             455             460
Glu Thr Asn Asn Leu Thr Leu Thr Ile Val Asn Asp Ile Leu Thr Gly
465                 470             475                 480
Ser Glu Phe Pro Glu Thr
                485


        <210> 100
        <211> 468
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 100
Leu Val Gly Lys Lys Phe His Gln Ile Lys Arg Thr Ile Leu Glu Ala
1               5               10              15
Pro Leu Tyr Tyr Leu Val Ser Gly Ile Ile Ala Leu Cys Arg His Thr
            20              25              30
Pro Arg Ser Phe Leu Thr Gly Leu Gly Lys Gly Phe Gly Phe Leu Ala
        35              40              45
Phe Tyr Ile Ile Ser Asp Tyr Arg Lys Thr Ala Leu Thr Asn Leu Ala
    50              55              60
Leu Ala Phe Pro Glu Lys Thr Phe Asp Glu Arg Tyr Lys Ile Ala Arg
65              70              75              80
Gln Ser Leu Gln His Leu Ile Ile Thr Leu Leu Glu Leu Leu Ala Ile
            85              90              95
Glu Gln Leu Val Gly Asn Ile Asp Lys Leu Ile Thr Ile Val Thr Ser
            100             105             110
Ser Arg Asn Pro Lys Gly Phe Ser Ser Glu Glu Val Ile Ser Asn Glu
    115                 120             125
```

```
Asp Leu Glu Glu Thr Phe Lys Asn Leu Gln Glu Lys Gln Gly Leu Ile
    130             135             140
Leu Phe Cys Gly His Gln Ala Asn Trp Glu Leu Pro Phe Leu Tyr Ile
145             150             155                 160
Thr Lys Asn Tyr Pro Gly Ile Ala Phe Ala Lys Ala Ile Lys Asn Gln
            165             170                 175
Arg Leu Ser Lys Lys Ile Phe Ala Leu Arg Glu Val Phe Lys Gly Lys
        180             185             190
Ile Val Pro Pro Lys Asn Gly Ile Gln Gln Gly Ile Glu Ala Leu Asn
        195             200             205
Gln Gly Lys Leu Val Gly Ile Val Gly Asp Gln Ala Leu Leu Met Ser
    210             215             220
Ser Tyr Thr Tyr Pro Leu Phe Gly Ser Pro Ala Phe Thr Thr Thr Ser
225             230             235                 240
Pro Ala Leu Leu Ala Tyr Lys Thr Gly Phe Pro Val Ile Ala Val Asn
            245             250                 255
Val Ser Arg Gln Ala Lys Gly Phe Glu Val Ile Pro Ser Ala Lys Leu
            260             265             270
Tyr Ala Asn Lys Ser Leu Pro Met Lys Glu Ser Val Ala Ile Leu Met
        275             280             285
Asp Gln Met Met Gly Phe Leu Glu Lys Gly Ile Ala Ser Gln Pro Glu
    290             295             300
Gln Trp Met Trp Ile His Lys Arg Trp Lys Arg Lys Ile Ser Asn Val
305             310             315                 320
Ile Lys Lys Lys Tyr Arg Tyr Ser His Ile Leu Val Phe Val Asp Gln
            325             330                 335
Val Ser Ser His Phe Ser Phe Leu Lys Ala Leu Ala Glu Cys Phe Ser
            340             345             350
Gly Thr Thr Leu His Leu Ala Leu Gly Asn Ala Asp His Leu Glu Glu
        355             360             365
Leu Gln Glu Gln Phe Pro Glu Tyr Ser Leu Ile Gln Leu Arg Asn Asp
    370             375             380
Gln Asp Ile Leu Ala Leu Pro Asn Cys Tyr Pro Ala Ile Phe Asp Leu
385             390             395                 400
Thr Asn Asn Leu Gln His Leu Tyr Lys His Phe Arg Lys Thr Gly Ser
            405             410                 415
Cys Ala Val Tyr Ser Lys Arg Phe Leu Glu Lys Ser Leu Asp His Pro
            420             425             430
Gln Ala Pro Leu Lys Asn Ser Leu Arg Ile Phe Tyr Ser Lys Asn Leu
            435             440             445
Lys Asp Lys Glu Arg Lys Asn Phe Lys Val Lys Ser Lys Gly Pro Arg
450             455             460
Leu Thr Val Glu
465
```

        <210> 101
        <211> 113
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 101

```
Tyr Tyr Cys Ala Ser Tyr Tyr Leu Lys Ile Ser Arg Phe Ala Ala Lys
1           5               10                  15
His Ala Pro Glu Arg Asn Met Leu Asn Ser Ile Val Thr Thr Arg Thr
            20              25              30
Arg Thr Ala Ala Thr Leu Leu Ile Pro Lys Val Ile Pro Glu Ala Pro
        35              40              45
Ser Thr Pro Val Gln Ile Lys Met Ile Ser Ile Lys Glu Thr Ile Ala
    50              55              60
Val Arg Ala Lys Ser Pro Ala Asp Thr Val Ala Thr Phe Ala Leu Asp
65              70              75                  80
```

Ser Glu Leu Ser Glu Gln Gln Gln Thr Val Leu Ile Ala Ala Ser Lys
                    85   90   95
Pro Arg Pro Lys Gln Ser Ile Lys His Ile Lys Phe Pro Leu Thr Lys
            100   105   110
Phe

        <210> 102
        <211> 434
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 102
Arg Thr Gln Lys Lys Thr Phe Ile Leu Leu Asp Leu Glu Thr Met Ile
1   5   10   15
Lys Phe Leu Ser Gln Leu Phe Ile Arg His Trp Pro Arg Lys Val Val
            20   25   30
Ser Leu Gly Phe Ala Ile Ile Ile Trp Ile Leu Val Gly Gln Ser Val
        35   40   45
Thr Ile Thr Arg Thr Leu Thr Asn Val Pro Val Arg Ile Val Asp Leu
    50   55   60
His Pro Asp Gln Thr Val Leu Gly Leu Gln Lys Ser Gly Phe Leu Asn
65   70   75   80
Lys Lys Val Ser Leu Thr Ile Thr Gly Asn Lys Asn Thr Val Gln Asp
                85   90   95
Leu Arg Pro Ser Asn Leu Glu Val Val Ile Ser Ala Ala Asn His Thr
            100   105   110
Glu Ser Trp Ile Ala Thr Ile Asp Lys His Asn Leu Val Ser Val Asp
        115   120   125
His Glu Ile Asn Ile Arg Lys Asp Ile His Ser Val Asp Ala Asn Asp
    130   135   140
Ile Phe Val Arg Leu Thr Gln Tyr Val Thr Glu Asp Ile Leu Leu Thr
145   150   155   160
Ile Thr Lys Pro Ile Gly Ser Pro Pro Lys Gly Tyr Glu Tyr Leu Asp
                165   170   175
Val Trp Pro Lys Tyr Leu Asn Gln Lys Val Ser Gly Pro Lys Glu Tyr
            180   185   190
Ile Asn Ala Leu Lys Glu Gln Gly Leu Glu Leu Thr Phe Asn Leu Asn
            195   200   205
Lys Ile Ser Phe Glu Glu Leu Glu Arg Asn Arg Ile Ala Gln Gly Ser
    210   215   220
His Asp Glu Ile Ile Phe Pro Ile Pro Lys Glu Trp Lys Lys Ile Leu
225   230   235   240
Ile Pro Phe Glu Asn Thr Phe Met Asp Leu Asn Asp Pro Gln Ala Asp
                245   250   255
Phe Leu Arg Leu Leu Phe Leu Lys Arg Glu Cys Ile Pro Leu Asn Leu
            260   265   270
Asn Leu Pro Val Phe Leu Phe Phe Pro Val Thr Phe Ile Gln Thr Met
            275   280   285
Asn Pro Leu Glu Tyr Ser Leu Asp Pro Val Pro Pro Ile Ile Leu Asn
    290   295   300
His Gly Ile His Gln Ile Asn Ile Pro Leu Tyr Val Lys Asp Val Ser
305   310   315   320
Arg Gln Phe Leu Asp Val Val Lys Asn Asn Met Val Leu Thr Ile Val
            325   330   335
Met Pro Ser Pro Gln Asp Pro Ser Ser Ile Asn Trp Ala Ile Glu Phe
            340   345   350
Leu Asp Glu Lys Thr Leu Glu Asn Thr Phe Leu Gln Thr Ile Ile Ala
        355   360   365
Gln Glu His Gly Ile Leu His Asp Ile Ala Leu Ile Asp Glu Ala Gly
    370   375   380

                                433

```
Ile Arg His Arg Phe Arg Glu Tyr Leu Arg Lys Leu Ala Leu Phe Thr
385                     390                 395                 400
Ala Asp Gly Glu Pro Leu Asn Leu Ile Ala Glu Ile Lys Asn Asn Lys
                405                 410                 415
Val Val Ile Gln Thr Lys Thr Lys Glu Thr Thr Lys Leu Tyr Lys Lys
                420                 425                 430
Glu Trp


        <210> 103
        <211> 282
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 103
Pro Ser Thr Leu Cys Asn Phe Ser Gln Tyr Thr Thr Gln Gly Pro Ser
1                   5                   10                  15
Lys Thr Met Pro Phe Asp Ile Thr Tyr Tyr Thr Thr Pro Leu Leu Glu
                20                  25                  30
Ile Ile Leu Ile Trp Val Met Leu Asn Tyr Leu Leu Lys Phe Phe Trp
        35                  40                  45
Gly Thr Arg Ala Met Asp Val Val Phe Gly Leu Leu Ala Phe Leu Phe
        50                  55                  60
Leu Phe Val Leu Ala Asp Lys Leu His Leu Pro Ile Ile Arg Arg Leu
65                  70                  75                  80
Met Leu His Val Val Asn Ile Ala Ala Ile Val Val Phe Ile Ile Phe
                85                  90                  95
Gln Pro Glu Ile Arg Leu Ala Leu Ser Arg Ile Arg Phe His Gly Lys
                100                 105                 110
Lys Phe Phe Ile Asp Thr Gln Glu Gln Phe Val Glu Gln Leu Ala Ala
        115                 120                 125
Ser Ile Tyr Gln Leu Ser Glu Arg Gln Ile Gly Ala Leu Val Val Leu
        130                 135                 140
Glu Asn Lys Asp Ser Phe Asp Glu Tyr Leu Ser Phe Ser Ser Val Lys
145                 150                 155                 160
Ile Asn Ala Thr Phe Ser Glu Glu Leu Leu Glu Thr Ile Phe Glu Pro
                165                 170                 175
Ser Ser Pro Leu His Asp Gly Ala Val Ile Leu Arg Gly Asp Ile Leu
        180                 185                 190
Ala Tyr Ala Arg Val Val Leu Pro Leu Ala His Asp Thr Thr Gln Leu
        195                 200                 205
Ser Arg Ser Met Gly Thr Arg His Arg Ala Ala Leu Gly Ala Ser Gln
        210                 215                 220
Arg Ser Asp Ala Leu Ile Ile Thr Val Ser Glu Glu Asn Gly Ser Val
225                 230                 235                 240
Ser Leu Ser Arg Asp Gly Leu Leu Thr Arg Gly Val Lys Ile Asp Arg
                245                 250                 255
Phe Lys Ala Val Leu Arg Ser Ile Leu Ser Pro Lys Glu His Lys Arg
                260                 265                 270
Lys Pro Leu Phe Ser Trp Ile Trp Lys Arg
        275                 280


        <210> 104
        <211> 456
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 104
Phe Tyr Ile Gln Phe Trp Lys Phe Met Asp Ala Leu Ile Leu Ser Arg
1                   5                   10                  15
```

```
Ile Gln Phe Gly Leu Phe Ile Thr Phe His Tyr Leu Phe Val Pro Leu
        20                  25              30
Ser Met Gly Leu Ser Met Met Leu Val Ile Met Glu Gly Leu Tyr Leu
        35              40                  45
Val Thr Lys Lys Gln Ile Tyr Lys Gln Met Thr Trp Phe Trp Val Gly
    50                  55                  60
Ile Phe Ala Leu Thr Phe Val Leu Gly Val Val Thr Gly Ile Met Gln
65                  70              75                      80
Ile Phe Ser Phe Gly Ser Asn Trp Ala Asn Phe Ser Glu Tyr Thr Gly
            85                  90                  95
Asn Ile Phe Gly Thr Leu Leu Gly Ser Glu Gly Val Phe Ala Phe Phe
            100             105                 110
Leu Glu Ser Gly Phe Leu Gly Ile Leu Leu Phe Gly Arg His Lys Val
        115             120                 125
Ser Lys Lys Met His Phe Phe Ser Thr Cys Met Val Ala Leu Gly Ala
    130             135                 140
His Met Ser Ala Phe Trp Ile Ile Cys Ala Asn Ser Trp Met Gln Thr
145             150                 155                     160
Pro Ser Gly Tyr Glu Met Val Met His Lys Gly Lys Leu Ile Pro Ala
            165                 170                 175
Leu Thr Ser Phe Trp Gly Val Val Phe Ser Pro Thr Thr Ile Asp Arg
            180             185                 190
Phe Ile His Ala Val Leu Gly Thr Trp Leu Ser Gly Val Phe Leu Val
        195             200                 205
Ile Ser Val Ser Ala Tyr Tyr Leu Trp Lys Lys Arg His His Glu Phe
    210             215                 220
Ala Lys Gln Gly Met Lys Ile Gly Thr Ile Cys Ala Val Ile Val Leu
225             230                 235                     240
Val Leu Gln Leu Trp Ser Ala Asp Val Thr Ala Arg Gly Val Ala Lys
            245                 250                 255
Asn Gln Pro Ala Lys Leu Ala Ala Phe Glu Gly Ile Phe Lys Thr Glu
            260                 265                 270
Glu Tyr Thr Pro Ile Trp Ala Phe Gly Tyr Val Asp Met Glu Lys Glu
        275                 280                 285
Arg Val Ile Gly Leu Pro Ile Pro Gly Ala Leu Ser Phe Leu Val His
    290                 295                 300
Arg Asn Ile Lys Thr Pro Val Thr Gly Leu Asp Gln Ile Pro Arg Asp
305             310                 315                     320
Glu Trp Pro Asn Val Gln Ala Val Phe Gln Leu Tyr His Leu Met Ile
            325                 330                 335
Met Leu Trp Gly Val Met Val Ala Leu Thr Leu Ile Ser Trp Ser Ala
            340                 345                 350
Tyr Lys Gly Trp Arg Trp Ala Leu Lys Pro Phe Phe Leu Val Ile Leu
        355                 360                 365
Thr Phe Ser Val Leu Leu Pro Glu Ile Cys Asn Glu Cys Gly Trp Cys
        370                 375                 380
Ala Ala Glu Met Gly Arg Gln Pro Trp Val Val Gln Gly Leu Leu Lys
385                 390                 395                 400
Thr Lys Asp Ala Val Ser Pro Ile Val Gln Ala Asn Gln Ile Val Gln
            405                 410                 415
Ser Leu Val Ile Phe Ser Leu Val Phe Ile Ala Leu Leu Thr Leu Phe
            420                 425                 430
Ile Thr Val Leu Cys Lys Lys Ile Lys His Gly Pro Glu Glu Glu Asn
        435                 440                 445
Asp Leu Thr Glu Phe Glu Val Lys
    450                 455

        <210> 105
        <211> 349
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 105

```
Asn Arg Gly Ile Phe Met Glu Leu Ser Leu Thr Ser Leu Leu Pro Leu
1               5               10              15
Ala Trp Tyr Val Ile Leu Gly Val Ala Val Phe Ala Tyr Ser Phe Gly
        20              25              30
Asp Gly Phe Asp Leu Gly Leu Gly Ala Val Tyr Leu Lys Ala Lys Glu
        35              40              45
Asp Lys Glu Arg Arg Ile Leu Leu Asn Ser Ile Gly Pro Val Trp Asp
    50              55              60
Gly Asn Glu Val Trp Leu Val Ile Ile Val Gly Gly Leu Phe Ala Gly
65              70              75              80
Phe Pro Ala Cys Tyr Ala Thr Leu Leu Ser Ile Phe Tyr Met Pro Ile
            85              90              95
Trp Thr Leu Val Leu Leu Tyr Ile Phe Arg Gly Cys Ser Leu Glu Phe
        100             105             110
Arg Ser Lys Ser Glu Ser Val Ser Trp Lys Ile Phe Trp Asp Ile Ile
    115             120             125
Phe Ile Cys Ser Gly Thr Ala Ile Ser Phe Phe Leu Gly Thr Ile Val
    130             135             140
Gly Asn Leu Ile Leu Gly Leu Pro Leu Ser Pro Asp Thr Ser Tyr Ala
145             150             155             160
Ser Leu Ser Trp Ile Leu Phe Phe Arg Pro Tyr Ala Ala Leu Cys Gly
            165             170             175
Ala Val Val Ala Ser Ala Phe Ala Ile His Gly Ser Cys Phe Ala Leu
        180             185             190
Met Lys Thr Ser Asp Ser Leu Asn Ala Arg Ile Ala Gln Gln Phe Pro
    195             200             205
Tyr Ile Leu Ser Ser Phe Leu Val Phe Tyr Val Leu Phe Leu Gly Ala
    210             215             220
Ser Leu Ile Ser Ile Pro Lys Arg Phe Asp Ala Phe Pro Thr Tyr Pro
225             230             235             240
Leu Leu Ile Leu Leu Ile Ala Leu Thr Ser Cys Cys Cys Val Ala Ala
            245             250             255
Lys Thr Ser Val Ser Lys Lys Arg Tyr Gly Tyr Ala Phe Ile Tyr Ser
        260             265             270
Thr Leu Asn Leu Leu Ser Leu Ile Leu Ser Ala Ala Thr Leu Thr Phe
    275             280             285
Pro Asn Ile Leu Leu Ser Thr Val Asp Pro Gln Tyr Ser Tyr Thr Ile
    290             295             300
Tyr Asn Ser Ala Val Glu Thr Lys Thr Leu Lys Ser Leu Leu Ile Ile
305             310             315             320
Val Leu Ile Gly Leu Pro Phe Ile Ile Thr Tyr Thr Cys Tyr Ile Tyr
            325             330             335
Arg Val Phe Arg Gly Lys Thr Asn Phe Pro Ser Ile Tyr
        340             345
```

<210> 106
<211> 403
<212> PRT
<213> Chlamydia pneumoniae

<400> 106

```
Glu Lys Ser Met Arg Met Leu Gln Ile Ser Met Leu Leu Leu Ala Leu
1               5               10              15
Gly Thr Ala Ile Asn Ser Pro Ala Ile Tyr Ala Ala Asp Ser Gln Ser
        20              25              30
Val Ser Phe Pro Glu Gln Leu Pro Ser Ser Phe Thr Gly Glu Ile Lys
        35              40              45
Gly Asn His Val Arg Met Arg Leu Ala Pro His Thr Asp Gly Thr Ile
    50              55              60
```

436

```
Ile Arg Glu Phe Ser Lys Gly Asp Leu Val Ala Val Ile Gly Glu Ser
65                  70                  75                  80
Lys Asp Tyr Tyr Val Ile Ser Ala Pro Pro Gly Ile Thr Gly Tyr Val
                85                  90                      95
Phe Arg Ser Phe Val Leu Asp Asn Val Val Glu Gly Glu Gln Val Asn
                100                 105                 110
Val Arg Leu Glu Pro Ser Thr Ser Ala Pro Val Leu Val Arg Leu Ser
        115                 120                 125
Arg Gly Thr Gln Ile Gln Pro Ala Ser Gln Glu Pro His Gly Lys Trp
    130                 135                 140
Leu Glu Val Val Leu Pro Ser Gln Cys Val Phe Tyr Val Ala Lys Asn
145                 150                 155                 160
Phe Val Ala Asn Lys Gly Pro Ile Glu Leu Tyr Thr Gln Arg Glu Gly
                165                 170                 175
Gln Lys Lys Ile Ala Met Asp Leu Ile Asn Ser Ala Leu Asn Phe Ala
                180                 185                 190
His Ile Glu Leu Glu Lys Ser Leu Asn Glu Ile Asp Leu Glu Ala Ile
    195                 200                 205
Tyr Lys Lys Ile Asn Leu Val Gln Ser Glu Glu Phe Lys Asp Val Pro
    210                 215                 220
Gly Ile Gln Gly Leu Ile Gln Lys Ala Leu Glu Glu Ile Gln Asp Ala
225                 230                 235                 240
Tyr Leu Ser Lys Ser Leu Glu Ser Gln Asn Thr Ser Ile Ala Ser Ser
                245                 250                 255
Gln Cys Ser Thr Pro Lys Val Ser Ser Ser Glu Val Thr Thr Ser Leu
            260                 265                 270
Leu Ser Arg His Ile Arg Lys Gln Thr Ala Leu Lys Thr Ala Pro Leu
    275                 280                 285
Thr Gln Gly Arg Glu Asn Leu Glu Tyr Ser Leu Phe Arg Ile Trp Ala
    290                 295                 300
Ser Met Gln Gln Gly Asn Asp His Ser Glu Ala Leu Thr Gln Glu Ala
305                 310                 315                 320
Phe Tyr Arg Ala Glu Gln Lys Lys Lys Gln Val Leu Ala Gly Val Leu
                325                 330                 335
Glu Val Tyr Pro His Val Val Lys Asn Asn Pro Gly Asp Tyr Leu Leu
                340                 345                 350
Lys Ala Gln Glu Asn Thr Ile Ala Phe Leu Tyr Gly Thr Ser Ile Asn
        355                 360                 365
Leu Glu Gln Trp Leu Gly Lys Arg Val Thr Val Glu Cys Leu Pro Arg
    370                 375                 380
Pro Asn Asn His Phe Ala Phe Pro Ala Tyr Tyr Val Val Gly Ile Lys
385                 390                 395                 400
Glu Ala Ser


        <210> 107
        <211> 285
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 107
Tyr Val Pro Phe Arg Lys Phe Ser Asn Gln Asn Pro Met Leu Leu Ile
1               5                   10                  15
Tyr Cys Lys Lys Lys Glu Ile His Leu Gln Trp Pro Gln Thr Ala Lys
            20                  25                  30
Ile Arg Phe Thr Pro Lys Ile Ala Met Lys Val Lys Ile Asn Asp Gln
        35                  40                  45
Leu Ile Cys Ile Pro Pro Phe Ile Ser Ala Arg Trp Ser Gln Ile Ala
    50                  55                  60
Phe Ile Glu Ser Gln Glu Gly Glu Asn Lys Asp Gln Gly Thr Leu Arg
65                  70                  75                  80
```

437

Leu His Leu Ile Asp Gly Lys Ile Ile Ser Ile Pro Asn Leu Asp Gln
                85   90   95
Ser Ile Ile Asp Ile Ala Phe Gln Glu His Leu Leu Tyr Leu Glu Thr
             100   105   110
Ser Gln Ser Gly Lys Glu Asp Ser Arg Asp Asp Asp Lys Leu Gly Val
             115   120   125
Gly Val Leu Met Asn Val Leu Gln Gln Ile Thr Lys Gly Asn Asp Ile
    130   135   140
Gln Val Leu Pro Lys Asn Leu Ile Ser Pro Leu Phe Ser Gly Thr Asn
145   150   155   160
Pro Ile Glu Ala Ile Leu Gln His Thr Pro Glu His Lys Asp His Pro
                165   170   175
Asp Ala Pro Thr Asp Val Leu Glu Lys Met Ala Asp Val Ile Arg Val
             180   185   190
Leu Ser Gly Asn Asn Ala Thr Leu Leu Pro Arg Pro Glu Pro His Cys
        195   200   205
Asn Cys Met His Cys Gln Ile Gly Arg Val Met Asn Glu Glu Asp Thr
    210   215   220
Leu Ala Val Ser Asp Lys Asp Leu Thr Phe Arg Thr Trp Asp Ile Met
225   230   235   240
Gln Ser Gly Asp Lys Leu Tyr Ile Val Thr Asn Pro Leu Asn Pro Ser
                245   250   255
Asp Gln Phe Ser Val Tyr Leu Gly Pro Pro Ile Gly Cys Thr Cys Gly
             260   265   270
Glu Pro Asn Cys Glu His Ile Lys Ala Val Leu Tyr Thr
    275   280   285

<210> 108
<211> 434
<212> PRT
<213> Chlamydia pneumoniae

<400> 108
Glu Lys Val Arg Thr Gln Met Lys Lys Thr Met Val Ile Asp Thr Ser
1   5   10   15
Val Phe Ile Tyr Asp Pro Glu Ala Leu Phe Ser Phe Glu Asn Thr Arg
             20   25   30
Ile Ile Ile Pro Phe Pro Val Ile Glu Glu Leu Glu Ala Phe Gly Lys
        35   40   45
Phe Arg Asp Glu Ser Ala Lys Asn Ala Ser Arg Ala Leu Ser Asn Ile
    50   55   60
Arg Leu Leu Leu Glu Asn Ala Lys Thr Lys Val Thr Asp Gly Val Leu
65   70   75   80
Leu Pro Ser Gly Ser Glu Leu Arg Ile Glu Val Ala Pro Leu Ser Asn
                85   90   95
Asp Asp Arg Arg Gly Lys Leu Leu Thr Leu Glu Leu Leu Lys Ile Ile
             100   105   110
Ala Lys Arg Glu Pro Met Val Phe Val Thr Lys Ser Leu Gly Arg Arg
    115   120   125
Val Arg Ala Glu Ala Leu Gln Ile Glu Ser Arg Asp Tyr Glu Ser Lys
    130   135   140
Arg Phe Ser Phe Arg Ser Leu Tyr Arg Gly Phe Arg Glu Leu Gln Val
145   150   155   160
Ser Gln Glu Asp Ile Glu Asn Phe Tyr Lys Asn Gly Tyr Leu Asp Leu
             165   170   175
Pro Leu Asp Val Val Ser Ser Pro Asn Glu Tyr Phe Phe Met Ser Ala
             180   185   190
Gly Glu Asn His Phe Ala Leu Gly Arg Tyr Tyr Val Ser Glu Gly Lys
        195   200   205
Ile Ile Ala Leu Lys Ala Met Asp Lys Ser Val Trp Gly Ile Lys Pro
    210   215   220

438

```
Leu Asn Thr Glu Gln Arg Cys Ala Leu Asp Leu Leu Leu Arg Asp Asp
225                 230                 235                 240
Val Lys Leu Val Thr Leu Ile Gly Gln Ala Gly Ser Gly Lys Thr Ile
                245                 250                 255
Leu Ala Leu Ala Ala Ala Met His Lys Val Phe Asp Lys Glu Thr Tyr
            260                 265                 270
Asn Lys Val Leu Val Ser Arg Pro Ile Val Pro Met Gly Arg Asp Ile
        275                 280                 285
Gly Phe Leu Pro Gly Leu Lys Glu Asp Lys Leu Met His Trp Met Gln
    290                 295                 300
Pro Ile Tyr Asp Asn Met Glu Val Leu Phe Ser Ile Asn Gln Met Gly
305                 310                 315                 320
Asn Ser Ser Glu Ala Leu Gln Ala Leu Met Asp Ala Lys Lys Leu Glu
                325                 330                 335
Met Glu Ala Leu Thr Tyr Ile Arg Gly Arg Ser Leu Pro Lys Ala Phe
            340                 345                 350
Ile Ile Ile Asp Glu Ala Gln Asn Leu Thr Pro His Glu Ile Lys Thr
        355                 360                 365
Ile Ile Ser Arg Ala Gly Lys Gly Thr Lys Ile Val Leu Thr Gly Asp
    370                 375                 380
Pro Thr Gln Ile Asp Ser Leu Tyr Phe Asp Glu Asn Ser Asn Gly Leu
385                 390                 395                 400
Thr Tyr Leu Val Gly Lys Phe His His Leu Ala Leu Tyr Gly His Met
                405                 410                 415
Phe Met Thr Arg Thr Glu Arg Ser Glu Leu Ala Ala Ala Ala Ala Thr
                420                 425                 430
Ile Leu


    <210> 109
    <211> 310
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 109
Lys Lys Ser Pro Pro Pro Val Thr Pro Lys Glu Ile Pro Thr Gln Pro
1               5                   10                  15
Lys Pro Pro Ile Pro Gln Arg Pro Glu Val Ser Pro Thr Pro Thr Asp
            20                  25                  30
His Ile Val Pro Gly Ser Ile Glu Ala Ser Pro Ile Leu Gly Lys Lys
        35                  40                  45
Pro Ser Pro Asp Ser Met Val Ser Pro Leu Ser Leu Phe His Lys Met
    50                  55                  60
Leu Leu Glu Asn Trp Thr Pro Val Glu Glu Pro Phe Pro Trp Pro Pro
65                  70                  75                  80
Ala Glu Lys Asn Gln Lys Ile Phe Ala Trp Ala Leu Asn Gln Ser Lys
                85                  90                  95
Leu Ile Phe Val Ser Thr Ser Gly Asn Ile Ala Gln Pro Arg Leu Val
                100                 105                 110
Thr Asp Ser Met Ser Met Met Ile Val Asn Ala Ala Asn Arg Thr Met
        115                 120                 125
Ser Arg Asp Gly Ala Gly Thr Asn Gln Val Leu Ser Ala Ala Val Ser
    130                 135                 140
Val Asp Ser Trp Gly Leu Ser Gln Arg Pro Leu Asn Pro Glu Arg Gln
145                 150                 155                 160
Gly Thr Pro Leu Asn Glu Gly Glu Cys Arg Ala Gly Met Trp Arg Asn
                165                 170                 175
Ala Asp Gly Ser Asn His Thr Gly Lys Gln Gly Lys Pro His Tyr Leu
            180                 185                 190
Ala Gln Leu Leu Gly Pro Lys Ala Val Asp His His Asn Lys Ser Gln
    195                 200                 205
```

439

```
Ala Ala Phe Asp Arg Cys Lys Asn Ala Tyr Leu Asn Cys Phe Ser Leu
    210             215                 220
Ala Gln Thr Leu Gly Val Thr Phe Leu Gln Ile Pro Leu Ile Ser Ser
225                 230                 235                     240
Gly Ile Tyr Ala Pro Pro Glu Asn Arg Lys Lys Pro Asn Ser Glu Glu
                245                 250                 255
Asn Lys Val Arg Met Arg Trp Ile His Ala Val Lys Cys Ala Leu Val
                260                 265                 270
Ala Ala Met Gln Glu Phe Gly Asn Glu Pro Gly Asn Thr Asp Arg Arg
        275                 280                 285
Met Leu Ile Val Leu Thr Asp Leu Lys Thr Pro Ala Ile Thr Asp Pro
        290                 295                 300
Lys Lys Lys Ser His Leu
305                 310


        <210> 110
        <211> 195
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 110
Lys Asn Leu Phe His Tyr Lys Ala Ile Leu Met Ser Ile Phe Asn Glu
1               5                   10                  15
Glu Val Phe Ile Ile Ser His Arg His Thr Pro Leu Gly Gln Thr Ser
                20                  25                  30
Thr Ala Leu Arg Asn Thr Pro Leu Val Asn Pro Leu His Arg Thr Asn
        35                  40                  45
Leu Gln Arg Ile Ala Ser Tyr Ile Pro Ile Phe Ser Thr Phe Ile Gly
    50                  55                  60
Ile Lys Thr Leu Lys Gly Ile Ser Ser Leu Gln Tyr Ser Met Val Leu
65                  70                  75                      80
Met Thr Gly Asn Phe Ser Ser Val Cys Lys Thr Leu Pro Cys Pro Glu
                85                  90                  95
Ile Tyr Glu Glu Leu Pro Lys Val Arg Lys Glu Ala Trp Leu Glu Ile
                100                 105                 110
Phe Gly Ile Lys Ala Leu Tyr Tyr Leu Val Leu Gly Val Ile Lys Ile
        115                 120                 125
Ile Lys Leu Ile Val Arg Tyr Leu Cys Pro Cys Cys Arg Pro Pro Glu
        130                 135                 140
Pro Arg Glu Pro Gln Asn Pro Leu Thr Pro Thr Pro Leu Asp Met Gly
145                 150                 155                 160
Gln Gln Ile Asp Ala Ile Phe Ser Thr Pro Thr Ser Pro Thr Gly Phe
                165                 170                 175
Lys Asp Pro Phe Leu Asp Asp Leu Leu Gln Glu Asp Lys Lys Lys Ala
                180                 185                 190
Pro His Leu
        195


        <210> 111
        <211> 1046
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 111
Arg Gln Lys Met Thr Ala Asp Glu Val Gly Lys Asn Ser Phe Ala Lys
1               5                   10                  15
Lys Glu Glu Gln Val Leu Lys Phe Trp Lys Asp Asn Gln Ile Phe Glu
                20                  25                  30
Lys Ser Leu Gln Asn Arg Gln Gly Lys Thr Leu Tyr Ser Phe Tyr Asp
        35                  40                  45
```

440

```
Gly Pro Pro Phe Ala Thr Gly Leu Pro His Tyr Gly His Leu Leu Ala
    50              55          60
Ser Thr Ile Lys Asp Val Val Gly Arg Tyr Ala Thr Met Asp Gly Tyr
65              70          75              80
Tyr Val Pro Arg Arg Phe Gly Trp Asp Cys His Gly Val Pro Val Glu
            85          90              95
Tyr Glu Val Glu Lys Ser Leu Ser Leu Thr Ala Pro Gly Ala Ile Glu
            100         105             110
Asp Phe Gly Ile Ala Ser Phe Asn Glu Glu Cys Arg Lys Ile Val Phe
        115             120             125
Arg Tyr Val His Glu Trp Glu Tyr Tyr Ile Asn Arg Ile Gly Arg Trp
    130             135             140
Val Asp Phe Ser Ser Thr Trp Lys Thr Met Asp Ala Ser Phe Met Glu
145             150             155             160
Ser Val Trp Trp Val Phe Gln Ser Leu Tyr Asn Gln Gly Leu Val Tyr
            165             170             175
Glu Gly Thr Lys Val Val Pro Phe Ser Thr Ala Leu Gly Thr Pro Leu
        180             185             190
Ser Asn Phe Glu Ala Ser Gln Asn Tyr Lys Glu Val Asp Asp Pro Ser
        195             200             205
Leu Val Val Arg Met Pro Leu Gln Asn Asp Ser Ala Ser Leu Leu Val
    210             215             220
Trp Thr Thr Thr Pro Trp Thr Leu Pro Ser Asn Met Ala Ile Ala Val
225             230             235             240
Gly Glu Thr Leu Val Tyr Val Arg Ile Gln Asp Lys Lys Ser Gly Glu
            245             250             255
Gln Trp Ile Leu Ser Gln Gly Cys Val Ser Arg Trp Phe Ser Asn Pro
        260             265             270
Glu Glu Phe Val Ile Leu Glu Ser Phe Ser Gly Lys Asp Leu Val Gly
        275             280             285
Arg Thr Tyr Glu Pro Pro Phe Thr Phe Phe Gln Ser Lys Arg Glu Glu
    290             295             300
Gly Ala Phe Arg Val Ile Ala Ala Ser Phe Val Glu Glu Ser Glu Gly
305             310             315             320
Thr Gly Val Val His Met Ala Pro Ala Phe Gly Glu Gly Asp Phe Leu
            325             330             335
Val Cys Lys Glu Asn His Val Pro Leu Val Cys Pro Val Asp Ala His
        340             345             350
Gly Ser Phe Thr Glu Glu Ile Pro Gln Tyr Gln Gly Gln Tyr Ile Lys
        355             360             365
His Ala Asp Lys Glu Ile Ile Lys Phe Leu Lys Lys Glu Gly Arg Ile
    370             375             380
Phe Tyr His Gly Thr Val Lys His Arg Tyr Pro Phe Cys Trp Arg Thr
385             390             395             400
Asp Thr Pro Leu Ile Tyr Lys Ala Val Asn Ser Trp Phe Val Ala Val
            405             410             415
Glu Lys Ile Lys Asp Lys Met Leu Arg Ala Asn Ser Ser Ile His Trp
        420             425             430
Val Pro Glu His Ile Gln Glu Gly Arg Phe Gly Lys Trp Leu Glu Gly
    435             440             445
Ala Arg Asp Trp Ala Ile Ser Arg Asn Arg Tyr Trp Gly Thr Pro Ile
    450             455             460
Pro Ile Trp Lys Ser Ala Asp Gly Glu Ile Leu Val Val Gly Ser Ile
465             470             475             480
Arg Glu Leu Glu Glu Leu Thr Gly Thr Gln Ile Thr Asp Ile His Arg
            485             490             495
His Phe Ile Asp Asp Leu Asn Ile Val Lys Asp Gly Lys Pro Phe His
        500             505             510
Arg Ile Pro Tyr Val Phe Asp Cys Trp Phe Asp Ser Gly Ala Met Pro
    515             520             525
```

```
Tyr Ala Gln Asn His Tyr Pro Phe Glu Asn Gln Lys Glu Thr Glu Glu
    530                 535                 540
Ala Phe Pro Ala Asp Phe Ile Ala Glu Gly Leu Asp Gln Thr Arg Gly
545                 550                 555                 560
Trp Phe Tyr Thr Leu Thr Val Ile Ser Ala Ile Leu Phe Asp Arg Pro
            565                 570                 575
Ala Phe Arg Asn Ala Ile Val Asn Gly Ile Ile Leu Ala Glu Asp Gly
            580                 585                 590
Asn Lys Met Ser Lys Arg Leu Asn Asn Tyr Pro Ser Pro Lys Tyr Val
        595                 600                 605
Leu Asp Thr Tyr Gly Ala Asp Ala Leu Arg Leu Tyr Leu Leu His Ser
    610                 615                 620
Val Val Val Lys Ala Glu Asp Leu Arg Phe Ser Asp Lys Gly Ile Glu
625                 630                 635                 640
Gly Val Leu Lys Gln Ile Leu Leu Pro Leu Thr Asn Val Leu Ser Phe
            645                 650                 655
Phe Asn Thr Tyr Ala Glu Leu Tyr Gly Phe Asp Pro Lys Ser Gln Asp
            660                 665                 670
Ile Glu Pro Ala Tyr Thr Glu Ile Asp Gln Trp Ile Leu Ser Asn Leu
    675                 680                 685
Tyr Ser Val Val Gly Lys Val Arg Glu Ser Met Ser Gln Tyr His Leu
    690                 695                 700
Asn Phe Ala Val Glu Pro Phe Val Thr Phe Ile Asp Asp Leu Thr Asn
705                 710                 715                 720
Trp Tyr Ile Arg Arg Cys Arg Arg Arg Phe Trp Glu Ala Glu Asp Thr
                725                 730                 735
Pro Asp Arg Arg Ala Ala Phe Ser Thr Leu Tyr Glu Val Leu Thr Val
            740                 745                 750
Phe Cys Lys Val Ile Ala Pro Phe Val Pro Phe Leu Ala Glu Asp Ile
    755                 760                 765
Tyr Gln Lys Leu Lys Leu Glu Lys Glu Pro Glu Ser Val His Leu Cys
    770                 775                 780
Asp Phe Pro Gln Val Glu Met Asp Lys Ile Leu Pro Asp Leu Glu Lys
785                 790                 795                 800
Arg Met His Asp Ile Arg Glu Ile Val Gly Leu Gly His Ser Leu Arg
            805                 810                 815
Lys Glu His Lys Leu Lys Val Arg Gln Pro Leu Ala Asn Phe Tyr Val
        820                 825                 830
Val Gly Ser Lys Asp Arg Leu Ser Leu Leu Lys Thr Phe Glu Gly Leu
    835                 840                 845
Ile Ala Glu Glu Leu Asn Val Lys Asn Val Ile Phe Tyr Glu Glu Ala
    850                 855                 860
Pro Ser Phe Ile Tyr Thr Thr Val Lys Pro Asn Phe Arg Met Leu Gly
865                 870                 875                 880
Lys Lys Val Gly Ser Lys Met Lys Glu Val Gln Lys Ala Leu Ser Glu
            885                 890                 895
Leu Pro Asn Asn Ala Ile Asp Lys Leu Ile Gln Glu Glu Thr Trp Val
            900                 905                 910
Leu Thr Ile Asp Asp Arg Glu Ile Ala Leu Asp Gly Asp Asp Val Val
    915                 920                 925
Ile Cys Arg His Thr Asp Pro Gly Tyr Ile Ala Arg Ser Ser Ala Leu
    930                 935                 940
Phe Ser Val Ile Leu Asp Cys Gln Leu Arg Glu Pro Leu Ile Val Glu
945                 950                 955                 960
Gly Ile Ala Arg Glu Leu Val Asn Lys Ile Asn Thr Met Arg Arg Asn
            965                 970                 975
Gln Gln Leu His Val Ser Asp Arg Ile Ala Leu Arg Ile Lys Thr Thr
            980                 985                 990
Glu Ala Val His Arg Ala Phe Leu Asp Tyr Glu Asn Tyr Ile Cys Glu
    995                 1000                1005
```

```
Glu Thr Leu Ile Ile Ala Tyr Asp Phe Thr Gln Asp Ser Asp Phe Gln
    1010            1015            1020
Gly Glu Asn Trp Asp Ile Asn Gly His Ala Thr Gln Ile Glu Ile Thr
1025            1030            1035            1040
Val Ser Ser Ile Asp Ser
                1045


    <210> 112
    <211> 643
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 112
Leu Ser Tyr Pro Ser Ile Phe Met Lys Gln His Tyr Ser Leu Asn Lys
1               5               10              15
Ser Arg His Ile Leu Arg Ser Thr Tyr Lys Leu Leu Lys Ser Lys Lys
            20              25              30
Leu Ala His Ser Pro Ala Asp Lys Lys Gln Leu Gln Glu Leu Leu Glu
    35              40              45
Gln Leu Glu Glu Ala Ile Phe Glu His Asp Gln Glu Thr Ala Ser Asp
    50              55              60
Leu Ala Gln Gln Ala Leu Ala Phe Ser Asn Arg Tyr Pro Asn Ser Phe
65              70              75              80
Gly Arg Lys Thr Tyr Glu Leu Ile Lys Ala Leu Leu Phe Ala Gly Val
            85              90              95
Val Ala Phe Leu Val Arg Gln Phe Trp Phe Glu Leu Tyr Glu Val Pro
            100             105             110
Thr Gly Ser Met Arg Pro Thr Ile Leu Glu Gln Asp Arg Ile Leu Val
            115             120             125
Ser Lys Thr Thr Phe Gly Leu His Cys Pro Phe Ala Lys Lys Pro Leu
    130             135             140
Ala Phe Asn Pro Glu Ser Val Thr Arg Gly Gly Leu Val Val Phe Thr
145             150             155             160
Val Gly Asp Leu Pro Ile Pro Asp Ala Asp Thr Lys Tyr Phe Gly Leu
            165             170             175
Ile Pro Gly Lys Lys Arg Tyr Ile Lys Arg Cys Met Gly Arg Pro Gly
            180             185             190
Asp Phe Leu Tyr Phe Tyr Gly Gly Lys Ile Tyr Gly Leu Asp Asp Ala
    195             200             205
Gly Lys Arg Ile Glu Phe Pro Ser Val His Gly Leu Glu Asn Leu Tyr
    210             215             220
His Val Pro Tyr Ile Ser Phe Asp Gly Thr Thr Ser Ser His Thr Glu
225             230             235             240
Gly Gln Lys Thr Ile Ile Asp Phe Lys Gln Phe Asn Gln Ser Tyr Gly
            245             250             255
Arg Leu Ile Phe Pro Gln Thr Ser Met Tyr Gly Gln Phe Phe Asp His
            260             265             270
Lys Glu Trp His Gln Asp Glu Pro Asn Lys Leu Lys Asp Pro His Leu
            275             280             285
Ser Pro Val Ser Tyr Ala Asp Leu Phe Gly Met Gly Asn Tyr Ala Met
    290             295             300
Val Arg Ile Leu Thr Glu His Gln Ala Arg Thr Ser His Leu Leu Pro
305             310             315             320
Asn Pro Gly Ser Pro Thr Lys Val Tyr Leu Glu Ile Cys His Thr Ala
            325             330             335
Asn Leu Ser Tyr Pro Lys Pro Leu Leu Arg His Tyr Glu His Gln Leu
            340             345             350
Ser Pro Ala Ile Gln Pro Met Lys Thr Leu Leu Pro Leu Arg Lys Glu
    355             360             365
His Leu His Leu Ile Arg Asn Asn Leu Thr Thr Ser Arg Phe Ile Val
    370             375             380
```

443

Ala Gln Gly Cys Ala Tyr Lys Tyr His Gln Phe Lys Ile Asn Thr Ser
385   390   395   400
Gly Ile Ala Lys Ala Tyr Ala Ile Leu Leu Pro Lys Val Pro Asp Gly
                405   410   415
Cys Tyr Glu Tyr Ser Lys Gly Glu Ala Tyr Gln Ile Gly Phe Gly Glu
                420   425   430
Ile Arg Tyr Lys Leu Lys Ser Ser His Pro Leu Thr Gln Leu Asn Asp
            435   440   445
Lys Gln Val Ile Glu Leu Phe Asn Cys Gly Ile Asn Phe Ser Ser Ile
    450   455   460
Tyr Asn Pro Val Asn Pro Leu Gln Ala Pro Leu Pro Asn Arg Tyr Ala
465   470   475   480
Phe Phe Asn Gln Gly Asn Leu Tyr Ile Met Asp Ser Pro Val Phe Ile
                485   490   495
Lys Asn Asp Pro Thr Leu Gln Lys Phe Val Thr Ser Glu Thr Glu Lys
            500   505   510
Gln Glu Gly Ser Ser Glu Thr Gln Pro Tyr Ile Ala Phe Val Asp Lys
        515   520   525
Gly Leu Pro Pro Glu Asp Phe Lys Glu Phe Val Glu Phe Ile His Asn
    530   535   540
Phe Gly Ile Gln Val Pro Lys Gly His Val Leu Val Leu Gly Asp Asn
545   550   555   560
Tyr Pro Met Ser Ala Asp Ser Arg Glu Phe Gly Phe Val Pro Met Glu
                565   570   575
Asn Leu Leu Gly Ser Pro Leu Cys Thr Phe Trp Pro Ile Gly Arg Met
            580   585   590
Gly Arg Leu Thr Gly Val Ser Ala Pro Thr Thr Leu Ser Gly Tyr Leu
        595   600   605
Val Ser Gly Ile Ala Leu Ala Thr Gly Leu Ser Leu Ile Gly Tyr Val
610   615   620
Tyr Tyr Gln Lys Arg Arg Arg Leu Phe Pro Lys Lys Glu Glu Lys Asn
625   630   635   640
His Lys Lys

    <210> 113
    <211> 276
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 113
Gln Leu Gln Asn Arg Tyr Pro Ile Met Pro Asn Asp Ser Ser Thr Tyr
1   5   10   15
Phe Glu Arg Ile Leu Gln Lys Tyr Leu Met Lys Lys Gln Gly Lys Thr
            20   25   30
Leu Phe Leu Phe Leu Phe Leu Ser Phe Leu Phe Ser Thr Ala Phe Ser
        35   40   45
Gly Leu Phe Ala Ser Gln Thr Ser Ser Leu Arg Thr Ile Gln Glu Asn
    50   55   60
Ile Phe Leu Ala Lys Thr Gly Asp Tyr Thr Val Leu Ser Arg Gly Ser
65   70   75   80
Gln Arg Thr Phe Val Leu Val Lys Ser Thr Thr Pro Lys Thr Val Trp
            85   90   95
Ile Glu Ile Ile His Phe Pro Cys Ile Ala His Lys Glu Arg Pro Ser
            100   105   110
Leu Glu Gln Ala Ser Trp Lys Thr Val Ile His Gln Leu Glu Ser Pro
        115   120   125
Ser Gln Val Phe Val Val Ser Leu Ser Ser Glu Gly Ser Gln Phe Phe
    130   135   140
Ser Leu Asn Thr Arg Thr Lys Ser Leu Glu Pro Val Gly Lys Ser Thr
145   150   155   160

444

```
Thr Val Pro Ala Phe Leu Gln Ile Phe Asp Leu Pro Leu Ser Pro Ala
                165                     170             175
Pro Ala Asn Val Ile Lys Thr Lys Gly Lys Glu Asn Lys Pro Trp Ser
            180                 185                 190
Pro Lys Val Ser Phe Glu Gly Ala Pro Leu Thr Ser Ile Ser Val Asn
        195                 200                 205
Ala Trp Gln Gly Leu Trp Pro Lys Asp Arg Gly Pro Leu Ser Glu Thr
    210                 215                 220
Gly Ile Leu Met Tyr Phe Thr Gln Pro Asp Ile Ser Val Phe Pro Leu
225         .         230                 235                 240
Trp Val Ser Ile Glu Thr Pro Lys Gly Thr Ser Ile Val Arg Ala Val
                245                 250                 255
Asp Ile Gly His Gly Ala Thr Ser Pro Tyr Val Tyr Ser Leu Pro Asp
            260                 265                 270
Ser Lys Thr Gln
        275


        <210> 114
        <211> 117
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 114
Asp Ser Asp Phe Gly Val Val Asn Met Lys Lys Asn Thr His Pro Glu
1               5                   10                  15
Tyr Arg Gln Val Leu Phe Val Asp Ser Ser Thr Gly Tyr Lys Phe Val
            20                  25                  30
Cys Gly Ser Thr Tyr Gln Ser Glu Lys Thr Glu Val Phe Glu Gly Lys
        35                  40                  45
Glu Tyr Pro Val Cys Tyr Val Ser Val Ser Ser Ser Ser His Pro Phe
    50                  55                  60
Phe Thr Gly Ser Lys Lys Phe Val Asp Ala Glu Gly Arg Val Asp Lys
65                  70                  75                  80
Phe Leu Lys Arg Tyr Ser Asn Val Arg Gln Pro Ala Gln Gln Pro Gln
            85                  90                  95
Pro Glu Glu Asp Ala Leu Pro Ala Ala Lys Gly Lys Lys Lys Val Val
            100                 105                 110
Thr Lys Lys Lys Lys
        115


        <210> 115
        <211> 359
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 115
Gly Phe Met Lys Lys Lys Val Ala Glu Tyr Leu Asn Arg Leu Ala Glu
1         .         5                   10                  15
Val Glu Ile Lys Ile Ser Asn Pro Glu Ile Phe Ser Asn Ser Lys Glu
            20                  25                  30
Tyr Ser Ala Leu Ser Lys Glu.His Ser Tyr Leu Leu Glu Leu Lys Asn
        35                  40                  45
Ala Tyr Asp Lys Ile Leu Asn Leu Glu Lys Val Leu Ala Asp Asp Lys
    50                  55                  60
Gln Ala Leu Ala Ile Glu Lys Asp Pro Glu Met Val Val Met Leu Glu
65                  70                  75                  80
Glu Gly Ile Asn Glu Asn Lys Val Glu Leu Glu Lys Leu Asn Lys Ile
            85                  90                  95
Leu Glu Ser Leu Leu Val Pro Pro Asp Pro Asp Asp Asp Leu Asn Val
            100                 105                 110
```

445

Ile Met Glu Leu Arg Ala Gly Thr Gly Gly Glu Glu Ala Ala Leu Phe
     115   120   125

Val Gly Asp Cys Val Arg Met Tyr His Leu Tyr Ala Ser Ser Lys Gly
     130   135   140

Trp Lys Tyr Glu Val Leu Ser Ala Ser Glu Ser Asp Leu Lys Gly Tyr
145   150   155   160

Lys Glu Tyr Val Met Gly Ile Ser Gly Thr Gly Val Lys Arg Leu Leu
            165   170   175

Gln Tyr Glu Ala Gly Thr His Arg Val Gln Arg Val Pro Glu Thr Glu
            180   185   190

Thr Gln Gly Arg Val His Thr Ser Ala Ile Thr Ile Ala Val Leu Pro
            195   200   205

Glu Pro Ser Glu Glu Asp Thr Glu Leu Leu Ile Asn Glu Lys Asp Leu
            210   215   220

Lys Ile Asp Thr Phe Arg Ala Ser Gly Ala Gly Gly Gln His Val Asn
225   230   235   240

Val Thr Asp Ser Ala Val Arg Ile Thr His Leu Pro Thr Gly Val Val
            245   250   255

Val Thr Cys Gln Asp Glu Arg Ser Gln His Lys Asn Lys Asp Lys Ala
            260   265   270

Met Arg Ile Leu Lys Ala Arg Ile Arg Asp Ala Glu Met Gln Lys Arg
         275   280   285

His Asn Glu Ala Ser Ala Met Arg Ser Ala Gln Val Gly Ser Gly Asp
        290   295   300

Arg Ser Glu Arg Ile Arg Thr Tyr Asn Phe Ser Gln Asn Arg Val Thr
305   310   315   320

Asp His Arg Ile Gly Leu Thr Leu Tyr Asn Leu Asp Lys Val Met Glu
            325   330   335

Gly Asp Leu Asp Pro Ile Thr Thr Ala Met Val Ser His Ala Tyr His
         340   345   350

Gln Leu Leu Glu His Gly Asn
        355

<210> 116
<211> 297
<212> PRT
<213> Chlamydia pneumoniae

<400> 116
Val Met Pro Thr Thr Ser Tyr Ser Asn Met Glu Ile Lys Lys Ala Ile
1   5   10   15

Gln Glu Gly Thr Ala Tyr Leu Asp Tyr Tyr Gly Val Pro Leu Ser Asp
         20   25   30

Cys Glu Ala Leu Tyr Ile Leu Met Asp Leu Leu Glu Val Ser Ser Arg
        35   40   45

Ala Lys Leu Phe Asp Leu Val Gly Ile Ser Glu Thr Met Leu Met Glu
        50   55   60

Tyr Arg Lys Arg Leu Ala Leu Arg Gly Gln Arg Cys Pro Thr Ala Tyr
65   70   75   80

Leu Asn Gly Ala Val Ser Phe Leu Gly Leu Arg Leu Arg Val Asp Ser
         85   90   95

Arg Val Leu Ile Pro Arg Thr Glu Thr Glu Leu Leu Ala Glu Tyr Ile
        100   105   110

Ile Asn Tyr Leu Leu Ser His Ser Glu Ile Gln Thr Phe Tyr Asp Ile
        115   120   125

Cys Cys Gly Ser Gly Cys Leu Gly Leu Ala Ile Lys Lys Ser Cys Pro
        130   135   140

His Val Glu Val Val Leu Ser Asp Val Cys Pro Gln Ala Val Ala Val
145   150   155   160

Ala Asn Glu Asn Ala Lys Ser Asn Gly Leu Asp Val Lys Ile Leu Leu
        165   170   175

```
Gly Asp Leu Ser Ala Pro Tyr Thr Arg Pro Ala Asp Ala Phe Val Cys
            180                 185                 190
Asn Pro Pro Tyr Leu Ser Phe Asn Glu Ile Ile His Ile Asp Pro Glu
            195                 200                 205
Val Arg Cys Tyr Glu Pro Trp Lys Ala Leu Val Gly Gly Ser Thr Gly
    210                 215                 220
Leu Glu Phe Tyr Gln Arg Ile Ala Gln Glu Leu Pro Lys Ile Val Thr
225                 230                 235                 240
Ser Thr Gly Val Gly Trp Leu Glu Ile Gly Ser Ser Gln Gly Glu Ser
            245                 250                 255
Ile Lys Asn Ile Phe Ser Lys His Gly Ile Tyr Gly Arg Leu His Gln
            260                 265                 270
Asp Leu Ser Gly Arg Asp Arg Ile Phe Phe Leu Glu Met Asp Gly Arg
            275                 280                 285
Asp Pro Val Ser Ser Gly Ala Tyr Ser
    290                 295


        <210> 117
        <211> 448
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 117
Met Ile Asn Ser Leu Ser Gln Lys Leu Ser Ser Ile Phe Ser Phe Leu
  1             5                 10                  15
Val Ser Ser Arg Arg Ile Asn Glu Glu Asn Ile Ser Glu Ser Ile Arg
            20                  25                  30
Glu Val Arg Leu Ala Leu Leu Asp Ala Asp Val Asn Tyr His Val Val
            35                  40                  45
Lys Asp Phe Ile Ser Lys Val Lys Glu Lys Ile Leu Gly Glu Glu Ile
    50                  55                  60
Trp Lys His Val Ser Pro Gly Gln Gln Phe Ile Arg Cys Leu His Glu
65                  70                  75                  80
Glu Leu Val Ala Phe Leu Ser Asp Gly Arg Glu Glu Phe Thr Ile Gln
                85                  90                  95
Lys Thr Pro Ser Ile Ile Leu Leu Cys Gly Leu Gln Gly Ala Gly Lys
            100                 105                 110
Thr Thr Thr Ala Ala Lys Leu Ala Asp Tyr Val Ile Lys Asn Lys Lys
    115                 120                 125
Ala Lys Lys Val Leu Val Val Pro Cys Asp Leu Lys Arg Phe Ala Ala
    130                 135                 140
Val Asp Gln Leu Lys Ile Leu Val Ala Gln Thr Lys Ala Glu Phe Tyr
145                 150                 155                 160
Gln Ser Gln Glu Asn Lys Pro Ile Asn Val Val Val Lys Ala Leu Ala
            165                 170                 175
Tyr Ala Lys Glu Asn Gly His Asp Phe Val Ile Leu Asp Thr Ala Gly
            180                 185                 190
Arg Leu Asn Ile Asp Asn Glu Leu Met Glu Glu Leu Thr Ala Ile Gln
            195                 200                 205
Lys Val Ser Gln Ala Asn Glu Arg Leu Phe Val Met Asn Val Ala Met
    210                 215                 220
Gly Gln Asp Val Leu Ala Thr Val Gln Ala Phe Asp Gln Ser Leu Asp
225                 230                 235                 240
Leu Thr Gly Val Ile Leu Ser Met Thr Asp Gly Asp Ala Arg Ala Gly
            245                 250                 255
Ala Val Phe Ser Ile Lys His Val Leu Gly Lys Pro Ile Lys Phe Glu
            260                 265                 270
Gly Cys Gly Glu Arg Ile Gln Asp Leu Arg Ser Phe Asp Pro Gln Ser
    275                 280                 285
Met Ala Glu Arg Ile Leu Gly Met Gly Asp Thr Ile Asn Phe Val Lys
    290                 295                 300
```

447

```
Glu Met Arg Glu Tyr Ile Ser Glu Glu Glu Asp Ala Glu Leu Gly Lys
305             310             315             320
Lys Leu Val Thr Ala Ala Phe Thr Tyr Glu Asp Tyr Tyr Lys Gln Met
            325             330             335
Lys Ala Phe Arg Arg Met Gly Pro Leu Arg Lys Leu Leu Gly Met Met
            340             345             350
Pro Gly Phe Asn Asn Ala Lys Pro Ser Gln Lys Glu Ile Glu Asp Ser
            355             360             365
Glu Gln Gln Met Lys Arg Thr Glu Ala Ile Ile Leu Ser Met Thr Pro
    370             375             380
Glu Glu Arg Lys Glu Leu Val Glu Leu Asp Met Ser Arg Met Lys Arg
385             390             395             400
Ile Ala Ser Gly Cys Gly Leu Thr Leu Gly Asp Val Asn Gln Phe Arg
            405             410             415
Lys Gln Met Ser Gln Ser Lys Lys Phe Phe Lys Gly Met Ser Lys Gly
            420             425             430
Lys Met Glu Gln Val Arg Lys Lys Met Ser Gly Gly Asn Gln Trp Arg
        435             440             445
```

        <210> 118
        <211> 127
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 118
```
Glu Lys Asn Val Arg Arg Lys Ser Val Ala Leu Lys Ile Arg Leu Arg
1               5               10              15
Gln Gln Gly Arg Arg Asn His Val Val Tyr Arg Leu Val Leu Ala Asp
            20              25              30
Val Glu Ser Pro Arg Asp Gly Lys Tyr Ile Glu Leu Leu Gly Trp Tyr
        35              40              45
Asp Pro His Ser Ser Ile Asn Tyr Gln Leu Lys Ser Glu Arg Ile Phe
    50              55              60
Tyr Trp Leu Glu Arg Gly Ala Gln Leu Ser Ser Lys Ala Glu Ala Leu
65              70              75              80
Val Lys Gln Gly Ala Pro Gly Val Tyr Ser Ala Leu Leu Ser Lys Gln
            85              90              95
Glu Ala Arg Lys Leu Val Val Arg Lys Lys Arg Arg Ala Tyr Arg Gln
            100             105             110
Arg Arg Ser Thr Gln Arg Glu Glu Ala Ala Lys Asp Ala Thr Lys
    115             120             125
```

        <210> 119
        <211> 363
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 119
```
Thr Gly Met Lys Ile Asp Ile Leu Ser Leu Phe Pro Gly Tyr Phe Asp
1               5               10              15
Gly Pro Leu Gln Thr Ser Ile Leu Gly Arg Ala Ile Lys Gln Arg Leu
            20              25              30
Leu Asp Val Gln Leu Thr Asn Leu Arg Asp Phe Gly Leu Gly Lys Trp
        35              40              45
Lys Gln Val Asp Asp Thr Pro Phe Ser Gly Gly Gly Met Leu Leu Met
    50              55              60
Ala Glu Pro Val Thr Ser Ala Ile Arg Ser Val Arg Lys Glu Asn Ser
65              70              75              80
Lys Val Ile Tyr Leu Ser Pro Gln Gly Ala Leu Leu Thr Ala Glu Lys
            85              90              95
```

```
Ser Arg Glu Leu Ala Ala Ala Ser His Leu Ile Leu Leu Cys Gly His
            100                 105                 110
Tyr Glu Gly Ile Asp Glu Arg Ala Ile Glu Ser Glu Val Asp Glu Glu
            115             .   120             .   125
Ile Ser Ile Gly Asp Tyr Val Leu Thr Asn Gly Gly Ile Ala Ala Leu
        130             135                 140
Val Leu Ile Asp Ala Val Ser Arg Phe Ile Pro Gly Val Leu Gly Asn
145                 150                 155                 160
Gln Glu Ser Ala Glu Arg Asp Ser Leu Glu Asn Gly Leu Leu Glu Gly
                165                 170                 175
Pro Gln Tyr Thr Arg Pro Arg Glu Phe Glu Gly Lys Glu Val Pro Glu
            180                 185                 190
Val Leu Leu Gln Gly Asp His Lys Ala Ile Ser Gln Trp Arg Leu Glu
        195                 200                 205
Gln Ser Glu Arg Arg Thr Tyr Glu Arg Arg Pro Asp Leu Tyr Leu Asn
    210                 215             .   220
Tyr Leu Tyr Lys Arg Ser Ile Asp His Lys Phe Asp Glu Glu Thr Thr
225                 230                 235                 240
Thr Asn Arg Asp His Phe Lys Cys Asp Lys Ile Ser Val Val Leu Glu
            245                 250                 255
Val Asn Lys Leu Lys Arg Ala Lys Asn Phe Tyr Cys Lys Val Phe Gly
            260                 265                 270
Leu Asp Ala Met Ser Cys Glu Asn Lys Phe Cys Leu Pro His Glu Gly
            275                 280                 285
Lys Thr Ile Phe Trp Leu Arg Glu Val Gln Ala Glu Lys Lys Asn Ile
    290                 295                 300
Val Thr Leu Ser Leu Ser Leu Asp Cys Ala Cys Glu Glu Asp Phe Cys
305                 310                 315                 320
Tyr Leu Leu Arg Arg Trp Glu Leu Phe Gly Gly Lys Leu Leu Glu Lys
            325                 330                 335
Gln Ala Asp Glu His Ala Val Trp Ala Leu Ala Gln Asp Leu Asp Gly
            340                 345                 350
His Ala Trp Ile Phe Ser Trp His Arg Met Lys
            355                 360
```

        <210> 120
        <211> 130
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 120

```
Lys Lys Glu Asn Phe Arg Trp Tyr Ile Met Val Asn Leu Leu Lys Glu
1               5               10                  15
Leu Glu Gln Glu Gln Cys Arg Asn Asp Leu Pro Glu Phe His Val Gly
            20                  25                  30
Asp Thr Ile Arg Leu Ala Thr Lys Ile Ser Glu Gly Gly Lys Glu Arg
        35                  40                  45
Val Gln Val Phe Gln Gly Thr Val Met Ala Arg Arg Gly Gly Gly Ser
    50                  55                  60
Gly Glu Thr Val Ser Leu His Arg Val Ala Tyr Gly Glu Gly Met Glu
65                  70                  75                  80
Lys Ser Phe Leu Leu Asn Ser Pro Arg Ile Val Ser Ile Glu Ile Val
                85                  90                  95
Lys Arg Gly Lys Val Ala Arg Ala Arg Leu Tyr Tyr Leu Arg Gly Lys
            100                 105                 110
Thr Gly Lys Ala Ala Lys Val Lys Glu Phe Val Gly Pro Arg Ser Ser
            115                 120                 125
Lys Lys
    130
```

<210> 121
<211> 215
<212> PRT
<213> Chlamydia pneumoniae

<400> 121

```
Leu Met Asn Thr Ser Ile Ser Glu Ile Gln Arg Phe Leu Ser Met Ile
1               5                   10                  15
Ala Phe Glu Lys Glu Leu Val Ser Glu Asp Phe Ser Val Val Ala Gly
            20                  25                  30
Ile Asp Glu Ala Gly Arg Gly Pro Leu Ala Gly Pro Val Val Ala Ser
        35                  40                  45
Ala Cys Ile Leu Pro Lys Gly Lys Val Phe Pro Gly Val Asn Asp Ser
    50                  55                  60
Lys Lys Leu Ser Pro Lys Gln Arg Ala Gln Val Arg Asp Ala Leu Met
65                  70                  75                  80
Gln Asp Pro Glu Val Cys Phe Gly Ile Gly Val Ile Ser Val Glu Arg
                85                  90                  95
Ile Asp Gln Val Asn Ile Leu Glu Ala Thr Lys Glu Ala Met Leu Gln
            100                 105                 110
Ala Ile Ser Ser Leu Pro Ile Ser Pro Asp Ile Leu Leu Val Asp Gly
            115                 120                 125
Leu Tyr Leu Pro His Asp Ile Pro Cys Lys Lys Ile Ile Gln Gly Asp
    130                 135                 140
Ala Lys Ser Ala Ser Ile Ala Ala Ala Ser Ile Leu Ala Lys Glu His
145                 150                 155                 160
Arg Asp Asp Leu Met Leu Gln Leu His Arg Leu Tyr Pro Glu Tyr Gly
                165                 170                 175
Phe Asp Arg His Lys Gly Tyr Gly Thr Ser Leu His Val Glu Ala Ile
            180                 185                 190
Arg Arg Tyr Gly Pro Ser Pro Cys His Arg Lys Ser Phe Ser Pro Ile
        195                 200                 205
Lys Gln Met Cys Ala Ile Val
210                 215
```

<210> 122
<211> 218
<212> PRT
<213> Chlamydia pneumoniae

<400> 122

```
Glu Glu Leu Phe Ser Asn Lys Ala Asn Val Cys Tyr Cys Met Asn Lys
1               5                   10                  15
Ile Leu Val Asp Ser Pro Phe Ser Pro Asp His Gln Lys Cys Cys Pro
            20                  25                  30
Lys Leu Phe Thr Ile Ser Ala Pro Ala Gly Val Gly Lys Thr Thr Leu
        35                  40                  45
Val Arg Met Leu Glu Gln Glu Phe Ser Ser Ala Phe Ala Glu Thr Ile
    50                  55                  60
Ser Val Thr Thr Arg Lys Pro Arg Glu Gly Glu Val Pro Gly Lys Asp
65                  70                  75                  80
Tyr His Phe Val Ser His Glu Glu Phe Gln Arg Leu Leu Asp Arg Gln
                85                  90                  95
Ala Leu Leu Glu Trp Val Phe Leu Phe Gly Glu Cys Tyr Gly Thr Ser
            100                 105                 110
Met Leu Glu Ile Glu Arg Ile Trp Ser Leu Gly Lys His Ala Val Ala
            115                 120                 125
Val Ile Asp Ile Gln Gly Ala Leu Phe Ile Arg Ser Arg Met Pro Ser
    130                 135                 140
Val Ser Ile Phe Ile Ala Pro Pro Ser Gln Glu Glu Leu Glu Arg Arg
145                 150                 155                 160
```

```
Leu Ala Ser Arg Gly Ser Glu Glu Gly Ser Gln Arg Lys Glu Arg Leu
              165                 170                 175
Glu His Ser Leu Ile Glu Leu Ala Ala Ala Asn Gln Phe Asp Tyr Val
              180                 185                 190
Ile Ile Asn Asp Asp Leu Asn Gln Ala Tyr Arg Val Leu Lys Ser Ile
              195                 200                 205
Phe Ile Ala Glu Glu His Arg Asn Ile Leu
    210                 215
```

        <210> 123
        <211> 100
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 123
```
Glu His Ile Met Ile Lys Lys Asp Arg Phe Thr Asn Glu Lys Leu Asn
1                 5                   10                  15
Lys Leu Phe Asp Ser Pro Phe Ser Leu Val Asn Tyr Ala Ile Lys Gln
              20                  25                  30
Ala Lys Ile Lys Ile Ala Lys Gly Asp Val Arg Ser Ser Asn Val Ala
              35                  40                  45
Ile Glu Thr Leu Val Leu Leu Asp Arg Glu Gly Ile Gln Pro Glu Phe
    50                  55                  60
Thr Glu Glu Ile Val Val Thr Ala Ser Pro Thr Val Glu Arg Lys Arg
65                  70                  75                  80
Ser Glu His Thr Asn Ser Arg Lys Lys Asp Pro Ser Ala Tyr Thr Trp
              85                  90                  95
Ser Asp Val Lys
              100
```

        <210> 124
        <211> 554
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 124
```
Cys Lys Val Met Pro Gln Lys Val Leu Ile Thr Ser Ala Leu Pro Tyr
1                 5                   10                  15
Ala Asn Gly Pro Leu His Phe Gly His Ile Ala Gly Val Tyr Leu Pro
              20                  25                  30
Ala Asp Val Tyr Ala Arg Phe Arg Leu Leu Gly Asp Asp Val Leu
              35                  40                  45
Tyr Ile Cys Gly Ser Asp Glu Phe Gly Ile Ala Ile Thr Leu Asn Ala
    50                  55                  60
Asp Arg Glu Gly Leu Gly Tyr Gln Glu Tyr Val Asp Met Tyr His Lys
65                  70                  75                  80
Leu His Lys Asp Thr Phe Glu Lys Leu Gly Phe Ala Leu Asp Phe Phe
              85                  90                  95
Ser Arg Thr Thr Asn Pro Phe His Ala Glu Leu Val Gln Asp Phe Tyr
              100                 105                 110
Ser Gln Leu Lys Ala Ser Gly Leu Ile Glu Asn Arg Ile Ser Glu Gln
              115                 120                 125
Leu Tyr Ser Glu Gln Glu Gln Arg Phe Leu Ala Asp Arg Tyr Val Glu
    130                 135                 140
Gly Thr Cys Pro Arg Cys Gly Phe Asp His Ala Arg Gly Asp Glu Cys
145                 150                 155                 160
Gln Ser Cys Gly Ala Asp Tyr Glu Ala Ile Asp Leu Ile Gly Pro Lys
              165                 170                 175
Ser Lys Ile Ser Gly Val Glu Leu Val Lys Lys Glu Thr Glu His Ser
              180                 185                 190
```

451

Tyr Phe Leu Leu Asp Arg Met Lys Asp Ala Leu Leu Ser Phe Ile Gln
        195   200   205
Gly Cys Tyr Leu Pro Asp His Val Arg Lys Phe Val Val Asp Tyr Ile
        210   215   220
Glu His Val Arg Ser Arg Ala Ile Thr Arg Asp Leu Ser Trp Gly Ile
225   230   235   240
Pro Val Pro Asp Phe Pro Gly Lys Val Phe Tyr Val Trp Phe Asp Ala
            245   250   255
Pro Ile Gly Tyr Ile Ser Gly Thr Met Glu Trp Ala Ala Ser Gln Gly
            260   265   270
Asn Pro Asp Glu Trp Lys Arg Phe Trp Leu Glu Asp Gly Val Glu Tyr
        275   280   285
Val Gln Phe Ile Gly Lys Asp Asn Leu Pro Phe His Ser Val Val Phe
        290   295   300
Pro Ala Met Glu Leu Gly Gln Lys Leu Asp Tyr Lys Lys Val Asp Ala
305   310   315   320
Leu Val Val Ser Glu Phe Tyr Leu Leu Glu Gly Arg Gln Phe Ser Lys
            325   330   335
Ser Glu Gly Asn Tyr Val Asp Met Asp Lys Phe Leu Ser Ser Tyr Ser
        340   345   350
Leu Asp Lys Leu Arg Tyr Val Leu Ala Ala Thr Ala Pro Glu Thr Ser
        355   360   365
Asp Ser Glu Phe Thr Phe Leu Asp Phe Lys Thr Arg Cys Asn Ser Glu
    370   375   380
Leu Val Gly Lys Phe Gly Asn Phe Ile Asn Arg Val Leu Ala Phe Ala
385   390   395   400
Glu Lys Asn His Tyr Asp Lys Leu Ser Tyr His Ser Val Val Leu Glu
            405   410   415
Asp Ser Asp Arg Ala Phe Leu Glu Glu Ala Arg Gln Leu Val Arg Asp
        420   425   430
Ala Glu Lys Cys Tyr Arg Glu Tyr Ser Leu Arg Lys Ala Thr Ser Val
        435   440   445
Ile Met Ser Leu Ala Ala Leu Gly Asn Val Tyr Phe Asn Gln Gln Ala
    450   455   460
Pro Trp Lys Leu Leu Lys Glu Gly Thr Arg Glu Arg Val Glu Ala Ile
465   470   475   480
Leu Phe Cys Ala Cys Tyr Cys Gln Lys Leu Leu Ala Leu Ile Ser Tyr
            485   490   495
Pro Ile Ile Pro Glu Ser Ala Val Ala Ile Trp Glu Met Ile Ser Pro
        500   505   510
Lys Ser Leu Glu Asn Cys Asn Leu Asp Thr Met Tyr Ala Arg Asp Leu
        515   520   525
Trp Lys Glu Glu Ile Leu Asp Val Ile Asn Glu Glu Phe His Leu Lys
    530   535   540
Ser Pro Arg Leu Leu Phe Thr Thr Val Glu
545   550

        <210> 125
        <211> 734
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 125
Asn Ser Met Glu Lys Ile Cys Gly Tyr Leu Glu Gln Ile Leu Val Glu
1   5   10   15
Asn Lys Asp Ser Gly Asp Ile Thr Ala Tyr Ile Lys Ile Pro Asn Lys
        20   25   30
Thr Thr Pro Ile Leu Ile Lys Gly Lys Leu Pro Gln Pro Leu Glu Leu
        35   40   45
Gly Ser Pro Ile Gln Ile Tyr Gly Val Trp Ser His Ser Pro Ser Asn
    50   55   60

452

```
Thr Lys Tyr Phe Gln Ile His Ser Tyr Asp Ser Pro Leu Leu Tyr Glu
65              70              75                      80
Tyr Arg Gly Val Phe His Tyr Leu Thr Ser Lys Leu Ile Lys Gly Ile
            85              90                      95
Gly Pro Lys Ile Ala Glu Lys Ile Ile Glu Lys Phe Gln Glu Lys Thr
            100             105             110
Cys Tyr Val Leu Asp Ile Thr Pro Glu Arg Leu Ser Glu Val Ser Gly
        115             120             125
Ile Ser Glu Thr Arg Cys Val Ser Ile Cys Lys Gln Leu Cys Glu Gln
    130             135             140
Lys Ile Leu Arg Lys Thr Leu Leu Phe Leu Gln Glu Tyr Asn Ile Pro
145             150             155                     160
Ile His Tyr Gly Val Arg Ile Phe Lys Lys Tyr Gln Glu Lys Ser Ile
            165             170                     175
Glu Lys Ile Cys Glu Asp Pro Phe Leu Leu Ala Arg Glu Met Glu Gly
            180             185             190
Ile Gly Phe Lys Thr Ala Asp Phe Ile Ala Met Lys Leu Gly Val Pro
        195             200             205
Arg Asn Ser Glu Ser Arg Leu Cys Ala Gly Ile Gln His Ser Leu Glu
    210             215             220
Glu Leu Gln Glu Glu Gly His Thr Cys Tyr Pro Ile Glu Leu Leu Ile
225             230             235                     240
Asp Val Val Ala Lys Leu Leu Asn Gln Asp Val Phe Asp Thr Pro Ile
            245             250             255
Thr Leu Glu Glu Ile Asp Thr Gln Ile Leu Asn Met Gln Lys Arg Lys
            260             265             270
Leu Leu His Ile Gln Asp Ile Ser Gly Thr Leu His Val Trp Thr Arg
    275             280             285
Tyr Leu His Leu Ala Glu Lys Thr Ile Val Ser Asp Leu Lys Arg Ile
    290             295             300
Leu Phe Ser Ser Arg Arg Ile Arg Ser Ile Asp Gly Glu Lys Ala Ile
305             310             315                     320
Ala Trp Val Glu Glu Asn Leu Ser Ile Asp Leu Ala Glu Gln Gln Arg
            325             330             335
Glu Ala Ile Lys Ala Cys Phe Ser Glu Lys Leu Leu Ile Ile Thr Gly
            340             345             350
Gly Pro Gly Thr Gly Lys Ser Thr Ile Thr Gln Ala Ile Leu Lys Ile
            355             360             365
Phe Glu Gln Val Thr His Lys Ile Ile Leu Ala Ala Pro Thr Gly Lys
    370             375             380
Ala Ala Lys Arg Met Thr Glu Ile Thr Gln Lys His Ser Val Thr Ile
385             390             395                     400
His Ala Leu Leu Gln Tyr Asp Phe Lys Thr Lys Ser Phe Arg Lys Asn
            405             410             415
His Asp Asn Pro Ile Asp Cys Asp Leu Ile Ile Val Asp Glu Ser Gly
            420             425             430
Met Met Asp Thr His Leu Leu His His Phe Leu Lys Ala Leu Pro Asp
    435             440             445
Tyr Thr Thr Leu Val Phe Ile Gly Asp Ile His Gln Leu Pro Ser Val
    450             455             460
Gly Pro Gly Asn Ile Leu Lys Asp Leu Ile Thr Ser Asn Lys Met Thr
465             470             475                     480
Val Ile Arg Leu Asn Lys Ile Phe Arg Gln Val His Asp Ser Gly Ile
            485             490             495
Val Thr Asn Ala His Arg Val Asn Glu Gly Glu Leu Pro Ile Leu Tyr
            500             505             510
Ser Glu Thr Gly Arg Arg Asp Phe Leu Phe Phe Gln Lys Asp Asp Gln
    515             520             525
Glu Glu Ala Leu Asn His Ile Ile His Leu Val Thr Lys Phe Val Pro
    530             535             540
```

```
Gln Lys Tyr His Ile Tyr Pro Gln Asp Ile Gln Val Leu Ala Pro Met
545             550             555             560
Lys Lys Gly Thr Leu Gly Ile Tyr Asn Leu Asn Lys Ala Leu Lys His
            565             570             575
Ala Leu Asn Pro Lys Lys Ala Asn Leu His Gly Arg Phe Gln Ser Tyr
            580             585             590
Ala Val Gly Asp Lys Val Met Gln Ile Arg Asn Asn Tyr Asn Lys Glu
            595             600             605
Val Phe Asn Gly Asp Ile Gly Tyr Val Ser Thr Ile Asn Phe Glu Asp
    610             615             620
Lys Ala Val Val Val Arg Met Glu Gly Lys His Val Gly Tyr Ser Phe
625             630             635             640
Ser Glu Leu Asp Asp Leu Val Leu Ala Tyr Ala Thr Ser Val His Lys
            645             650             655
Tyr Gln Gly Ser Glu Ser Pro Cys Ile Ile Ile Pro Ile His Thr Ser
            660             665             670
His Phe Met Met Leu Tyr Arg Asn Leu Leu Tyr Thr Ala Ile Thr Arg
            675             680             685
Gly Lys Lys Leu Val Ile Leu Val Gly Thr Lys Lys Ala Ile Ala Ile
    690             695             700
Ala Thr Arg Asn Asn Arg Val Gln His Arg Cys Thr Gly Leu Ala Glu
705             710             715             720
Val Leu Lys Glu Leu Asp Thr Lys Lys Asn Tyr Ala Asp Leu
            725             730


            <210> 126
            <211> 498
            <212> PRT
            <213> Chlamydia pneumoniae


            <400> 126
Ile Arg Ser Lys Gln Arg Thr Val Ala Ile Thr Leu Leu Val Leu Gly
1               5               10              15
Ile Leu Leu Ile Ala Ser Gly Ile Ile Phe Leu Ala Val Ala Ile Pro
            20              25              30
Gly Leu Ser Ser Ala Val Ala Leu Gly Leu Gly Cys Gly Met Thr Ala
            35              40              45
Leu Gly Thr Val Leu Leu Ile Thr Gly Leu Val Leu Leu Ile Arg Ser
    50              55              60
Glu Lys Leu Ala Leu Glu Gln Val Glu Ile Lys Gln Ala Arg Thr Arg
65              70              75              80
Val Asn Asn Glu Leu Asp Gln Leu Ser Gln Tyr Val Phe Tyr Thr Glu
            85              90              95
Asn Val Leu Asp Asn Leu Lys Arg Trp Ser Tyr Arg Asp Leu Gly Phe
            100             105             110
Val Arg Gln Ala Gln Glu Glu Val Thr Asn Leu Glu Gln Asp Ile Glu
            115             120             125
Glu Ile Phe Leu Thr Leu Arg Asp Ile Arg Asn Ala Leu Asp Asn Glu
    130             135             140
Glu Phe Phe Met Thr His Ala Lys Gln Cys Leu Ala Gln Val Gly Glu
145             150             155             160
Ser Leu Phe Gln Asp Ala Ser Ile Asp Glu Phe Ile Asn Leu Ala His
            165             170             175
Leu Ser Glu Ile Arg Gln His Leu Asp Ile Asn Asp Pro Arg Trp Ser
            180             185             190
Met Ile Thr Lys Lys Val Lys Gly Thr Val Val Arg Phe Ile Tyr Val
            195             200             205
Ser Thr Met Tyr Lys Gln Ile Lys Ser Asn Phe Glu Lys Ser Asp Phe
    210             215             220
Gly Gln Leu Arg Lys Met Leu Leu Asn Asn Tyr Lys Thr Ile Glu Glu
225             230             235             240
```

454

Val Leu Tyr Gln Ser Phe Gln Lys Gly Tyr Asn Arg Ala Ala Leu Leu
                245   250   255
Ser Glu Lys Thr Arg Ile Ile His Thr Ser Ser Leu Leu His Trp Glu
                260   265   270
Lys Asp Glu Asp Lys His Leu Asn Ile Lys Asn Glu Cys Ala Ser Arg
                275   280   285
Leu Glu Asn Phe Lys Lys Phe Arg Thr Leu Phe Leu Gly Leu Ser Glu
                290   295   300
Glu Asp Val Ile Asp Phe Thr Gly Ala Ser Gly Trp Asp Cys Ser Lys
305   310   315   320
Leu Pro Arg Lys Glu Val Pro Leu Asp Gly Gly Lys Lys Lys Leu Arg
                325   330   335
Phe Lys Arg Thr Phe Ala Asp Glu Gln Val Gly Asp Trp Asp Arg Thr
                340   345   350
Thr Ser Leu Glu His Met Thr Pro Gln Glu Glu Asp Pro Leu Asp Arg
                355   360   365
Leu Met Asp Gln Val Glu Gln Glu Ala Thr Ser Val Leu Lys Asp Gln
    370   375   380
Asp Arg Tyr Trp Lys Glu Ile Glu Thr Ser Glu Ala Lys Phe Arg Ser
385   390   395   400
Leu Pro Arg Glu Asp Asp Phe Glu Lys Gln Ser Gln Ile Asp Ser Tyr
                405   410   415
Ile Arg Asp Leu Asp Asp His Leu Ser Val Trp Ala Asn Gln Leu Ser
                420   425   430
Ala Ala Glu Asp Ala Leu Ile Glu Val Thr Asp Val Gln Glu His Gly
                435   440   445
Asn Arg Glu Met Leu Lys Asn Ile Gln Gln Gly Leu Glu Leu Ile Glu
    450   455   460
Asp Ala Val Lys Ala Thr Leu Pro Arg Val Asp Phe Ile Gln Glu Leu
465   470   475   480
Leu Glu Lys Glu Glu Leu Pro Leu Val Ala Ala Arg Met Ser Leu Glu
                485   490   495
Asn Ser

        <210> 127
        <211> 178
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 127
Lys Ile Ser Ser Cys Ala Glu Ile Met Ser Glu Val Lys Pro Leu Phe
1   5   10   15
Leu Lys Asn Asp Ser Phe Asp Leu Ala Thr Gln Arg Phe Gln Asn Leu
                20   25   30
Ile Asn Met Leu Gln Glu Gln Ala Glu Ile Tyr Asn Glu Tyr Glu Glu
        35   40   45
Lys Asn Ala Arg Val Gln Asn Glu Ile Lys Glu Gln Lys Asp Phe Val
    50   55   60
Lys Arg Cys Ile Glu Asp Phe Glu Ala Arg Gly Leu Gly Val Leu Lys
65   70   75   80
Glu Glu Leu Ala Ser Leu Thr Arg Asp Phe His Asp Lys Ala Lys Ala
                85   90   95
Glu Thr Ser Met Leu Ile Glu Cys Pro Cys Ile Gly Phe Tyr Tyr Ser
                100   105   110
Ile His Gln Glu Glu Gln Arg Gln Arg Gln Glu Arg Leu Gln Lys Met
        115   120   125
Ala Glu Arg Tyr Arg Asp Cys Lys Gln Val Leu Glu Ala Val Gln Val
    130   135   140
Glu Gln Lys Asp Met Ile Ser Ser Arg Val Val Val Asp Asp Ser Tyr
145   150   155   160

455

Phe Glu Glu Glu Lys Glu Glu Gln Lys Val Asp Asn Arg Lys Lys Glu
                165   170   175
Gln Asp

<210> 128
<211> 760
<212> PRT
<213> Chlamydia pneumoniae

<400> 128

```
Leu Leu Val Phe Ser Tyr Tyr Cys Met Gly Leu Phe Phe Phe Ser Gly
1               5                   10                  15
Ala Ile Ser Ser Cys Gly Leu Leu Val Ser Leu Gly Val Gly Leu Gly
            20                  25                  30
Leu Ser Val Leu Gly Val Leu Leu Leu Leu Leu Ala Gly Leu Leu Leu
        35                  40                  45
Phe Lys Ile Gln Ser Met Leu Arg Glu Val Pro Lys Ala Pro Asp Leu
    50                  55                  60
Leu Asp Leu Glu Asp Ala Ser Glu Arg Leu Arg Val Lys Ala Ser Arg
65                  70                  75                  80
Ser Leu Ala Ser Leu Pro Lys Glu Ile Ser Gln Leu Glu Ser Tyr Ile
                85                  90                  95
Arg Ser Ala Ala Asn Asp Leu Asn Thr Ile Lys Thr Trp Pro His Lys
            100                 105                 110
Asp Gln Arg Leu Val Glu Thr Val Ser Arg Lys Leu Glu Arg Leu Ala
        115                 120                 125
Ala Ala Gln Asn Tyr Met Ile Ser Glu Leu Cys Glu Ile Ser Glu Ile
        130                 135                 140
Leu Glu Glu Glu Glu His His Leu Ile Leu Ala Gln Glu Ser Leu Glu
145                 150                 155                 160
Trp Ile Gly Lys Ser Leu Phe Ser Thr Phe Leu Asp Met Glu Ser Phe
                165                 170                 175
Leu Asn Leu Ser His Leu Ser Glu Val Arg Pro Tyr Leu Ala Val Asn
                180                 185                 190
Asp Pro Arg Leu Leu Glu Ile Thr Glu Glu Ser Trp Glu Val Val Ser
        195                 200                 205
His Phe Ile Asn Val Thr Ser Ala Phe Lys Lys Ala Gln Ile Leu Phe
    210                 215                 220
Lys Asn Asn Glu His Ser Arg Met Lys Lys Lys Leu Glu Ser Val Gln
225                 230                 235                 240
Glu Leu Leu Glu Thr Phe Ile Tyr Lys Ser Leu Lys Arg Ser Tyr Arg
                245                 250                 255
Glu Leu Gly Cys Leu Ser Glu Lys Met Arg Ile Ile His Asp Asn Pro
                260                 265                 270
Leu Phe Pro Trp Val Gln Asp Gln Gln Lys Tyr Ala His Ala Lys Asn
        275                 280                 285
Glu Phe Gly Glu Ile Ala Arg Cys Leu Glu Glu Phe Glu Lys Thr Phe
        290                 295                 300
Phe Trp Leu Asp Glu Glu Cys Ala Ile Ser Tyr Met Asp Cys Trp Asp
305                 310                 315                 320
Phe Leu Asn Glu Ser Ile Gln Asn Lys Lys Ser Arg Val Asp Arg Asp
                325                 330                 335
Tyr Ile Ser Thr Lys Lys Ile Ala Leu Lys Asp Arg Ala Arg Thr Tyr
            340                 345                 350
Ala Lys Val Leu Leu Glu Glu Asn Pro Thr Thr Glu Gly Lys Ile Asp
            355                 360                 365
Leu Gln Asp Ala Gln Arg Ala Phe Glu Arg Gln Ser Gln Glu Phe Tyr
        370                 375                 380
Thr Leu Glu His Thr Glu Thr Lys Val Arg Leu Glu Ala Leu Gln Gln
385                 390                 395                 400
```

```
Cys Phe Ser Asp Leu Arg Glu Ala Thr Asn Val Arg Gln Val Arg Phe
                405                 410                 415
Thr Asn Ser Glu Asn Ala Asn Asp Leu Lys Glu Ser Phe Glu Lys Ile
                420                 425                 430
Asp Lys Glu Arg Val Arg Tyr Gln Lys Glu Gln Arg Leu Tyr Trp Glu
                435                 440                 445
Thr Ile Asp Arg Asn Glu Gln Glu Leu Arg Glu Glu Ile Gly Glu Ser
    450                 455                 460
Leu Arg Leu Gln Asn Arg Arg Lys Gly Tyr Arg Ala Gly Tyr Asp Ala
465                 470                 475                 480
Gly Arg Leu Lys Gly Leu Leu Arg Gln Trp Lys Lys Asn Leu Arg Asp
                485                 490                 495
Val Glu Ala His Leu Glu Asp Ala Thr Met Asp Phe Glu His Glu Val
                500                 505                 510
Ser Lys Ser Glu Leu Cys Ser Val Arg Ala Arg Leu Glu Val Leu Glu
                515                 520                 525
Glu Glu Leu Met Asp Met Ser Pro Lys Val Ala Asp Ile Glu Glu Leu
    530                 535                 540
Leu Ser Tyr Glu Glu Arg Cys Ile Leu Pro Ile Arg Glu Asn Leu Glu
545                 550                 555                 560
Arg Ala Tyr Leu Gln Tyr Asn Lys Cys Ser Glu Ile Leu Ser Lys Ala
                565                 570                 575
Lys Phe Phe Phe Pro Glu Asp Glu Gln Leu Leu Val Ser Glu Ala Asn
                580                 585                 590
Leu Arg Glu Val Gly Ala Gln Leu Lys Gln Val Gln Gly Lys Cys Gln
    595                 600                 605
Glu Arg Ala Gln Lys Phe Ala Ile Phe Glu Lys His Ile Gln Glu Gln
    610                 615                 620
Lys Ser Leu Ile Lys Glu Gln Val Arg Ser Phe Asp Leu Ala Gly Val
625                 630                 635                 640
Gly Phe Leu Lys Ser Glu Leu Leu Ser Ile Ala Cys Asn Leu Tyr Ile
                645                 650                 655
Lys Ala Val Val Lys Glu Ser Ile Pro Val Asp Val Pro Cys Met Gln
                660                 665                 670
Leu Tyr Tyr Ser Tyr Tyr Glu Asp Asn Glu Ala Val Val Arg Asn Arg
    675                 680                 685
Leu Leu Asn Met Thr Glu Arg Tyr Gln Asn Phe Lys Arg Ser Leu Asn
    690                 695                 700
Ser Ile Gln Phe Asn Gly Asp Val Leu Leu Arg Asp Pro Val Tyr Gln
705                 710                 715                 720
Pro Glu Gly His Glu Thr Arg Leu Lys Glu Arg Glu Leu Gln Glu Thr
                725                 730                 735
Thr Leu Ser Cys Lys Lys Leu Lys Val Ala Gln Asp Arg Leu Ser Glu
                740                 745                 750
Leu Glu Ser Arg Leu Ser Arg Arg
    755                 760
```

        <210> 129
        <211> 341
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 129
```
Glu Ser Phe Met Phe Pro Ser Ala Asn Gln Glu Ser Arg Thr Arg Asn
1               5                   10                  15
Val Pro Leu Gly Ile Phe His Gly Leu Val Ala Cys Leu Tyr Trp Gly
                20                  25                  30
Ile Val Phe Val Ile Pro Asn Phe Leu Gly Ser Phe Gly Asp Leu Asp
                35                  40                  45
Ile Val Leu Thr Arg Tyr Thr Ile Phe Gly Ile Phe Ser Leu Ile Ala
    50                  55                  60
```

```
Cys Ala Ile Lys Asn Pro Ser Val Ile Lys Lys Thr Pro Leu Tyr Ile
65                70                  75                  80
Trp Arg Lys Ser Leu Leu Trp Thr Leu Leu Ile Asn Pro Val Tyr Tyr
                85                  90                  95
Phe Gly Ile Thr Leu Gly Ile Arg Tyr Val Gly Ser Ala Ile Thr Val
            100                 105                 110
Val Ile Ala Ser Leu Ala Pro Thr Ala Val Leu Tyr His Ser Asn Thr
            115                 120                 125
Lys Gln Lys Glu Leu Pro Tyr Ser Leu Leu Phe Ala Ile Ser Ser Val
            130                 135                 140
Ile Ile Thr Gly Val Ile Leu Thr His Leu Ser Ala Leu Asn Leu Pro
145                 150                 155                 160
Thr Ala Ala Ser Pro Leu Tyr Ser Ile Leu Gly Val Ile Ala Val Ile
                165                 170                 175
Leu Ser Thr Ser Leu Trp Val Ile Tyr Val Ile Arg Asn Gln Ser Leu
                180                 185                 190
Leu Glu Lys His Pro Asn Leu Thr Pro Asp Thr Trp Ser Tyr Leu Ile
                195                 200                 205
Gly Ile Ser Ala Leu Ile Ile Cys Leu Pro Met Ile Ile Ile Leu Asp
    210                 215                 220
Leu Cys Gly Ile Thr His Val Thr His Asn Leu Ile Ser His Thr Pro
225                 230                 235                 240
Gly Ser Glu Arg Leu Leu Phe Leu Leu Leu Cys Ser Ala Met Gly Ile
                245                 250                 255
Phe Ser Ser Ala Lys Ala Leu Ile Ala Trp Asn Lys Ala Ser Leu Asn
            260                 265                 270
Leu Ser Pro Ala Leu Leu Gly Ala Ile Leu Ile Phe Glu Pro Ile Phe
            275                 280                 285
Gly Leu Val Leu Thr Tyr Leu Tyr Ser Gln Ser Leu Pro Ser Leu Gln
    290                 295                 300
Glu Gly Ile Gly Ile Phe Leu Met Leu Gly Gly Ser Leu Leu Cys Leu
305                 310                 315                 320
Val Leu Phe Gly Arg Lys Val Gln Lys Ser Leu Glu Asn Ser Gln Val
            325                 330                 335
Ser Ser Ser Asn Glu
            340


        <210> 130
        <211> 264
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 130
Glu Asp Arg Gly Arg Met Leu Arg Asn Gln Val Leu Val Tyr Cys Ser
1               5                   10                  15
Glu Gly Val Ser Pro Tyr Tyr Leu Arg His Thr Ile Arg Phe Leu Lys
            20                  25                  30
Tyr Tyr Ser Thr Gln Glu Gly Ala Phe Asp Ile Leu Arg Val Asp Gly
        35                  40                  45
Asn Phe Leu Ile Lys Asn Pro Phe Trp Glu Glu Thr Thr Arg Leu Leu
    50                  55                  60
Val Phe Pro Gly Gly Ala Asp Arg Pro Tyr His Arg Val Leu His Gly
65                  70                  75                  80
Leu Gly Thr Ala Arg Ile Phe Gln Tyr Val Ser Glu Gly Gly Asn Phe
                85                  90                  95
Leu Gly Ile Cys Ala Gly Ala Tyr Phe Gly Ser Lys Met Ile Tyr Phe
            100                 105                 110
Tyr Glu Pro Glu Gly Ala Pro Leu Gln Gly Ala Arg Asp Leu Gly Phe
    115                 120                 125
Phe Pro Gly Thr Ala Lys Gly Pro Ala Tyr Arg Gly Asn Phe Ser Tyr
    130                 135                 140
```

```
Val Ser Pro Ser Gly Val Arg Val Ser Pro Gln Leu Phe Ser Asp Phe
145             150             155                 160
Gly Leu Gly Tyr Ala Met Phe Asn Gly Gly Cys Phe Phe Glu Gly Ser
                165             170             175
Glu Gly Tyr Pro Gly Val Asn Ile Glu Ser Arg Tyr Asp Asp Leu Pro
            180             185             190
Gly Lys Pro Ala Ser Ile Val Ser Arg Ile Val Ser Lys Gly Leu Ala
        195             200             205
Val Leu Ser Gly Pro His Ile Glu Tyr Leu Pro His Tyr Cys Arg Met
    210             215             220
Val Lys Glu Asn Val Gln Lys Thr Arg Glu Phe Leu Gln Arg Glu Arg
225             230             235             240
Thr Thr Leu Asp Arg Tyr Cys Gln Asn Leu Val Gln Arg Leu Arg Gln
            245             250             255
Pro Ala Phe Ser Lys Ala Asp Cys
            260


        <210> 131
        <211> 228
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 131
Asp Glu Gln Tyr Ile Leu Ser His Ile His Met Asp Pro Arg Ile Phe
1               5               10                  15
Val Thr Ser Glu Pro Leu Gln Lys Thr Tyr Gln Lys Leu Gln Glu Lys
            20              25              30
His Val Asn Asn Leu Gly Ile Ala Ser Gln Val Ser Leu Thr Asp Leu
        35              40              45
Gln Asn Lys Thr Gln Tyr Glu Asn Asn Leu Ile Glu Thr Thr Thr Asn
    50              55              60
Glu Ile Thr Tyr Tyr Phe Pro Val Val His Asn Pro Asp Ile Leu Arg
65              70              75              80
Ser Glu Trp Asp Pro Ile Ser Asn Gln Leu Tyr Leu Ile Phe Lys Lys
            85              90              95
Phe Phe Ile His Tyr His Asn Leu Phe Ser Thr Ala Leu Glu Arg Asn
            100             105             110
Gln Ile Leu Leu Ile Asp Ser Leu Asn Thr Gly Ser Ser Asn Pro Ile
    115             120             125
Ala Arg Gln Met Glu Leu Leu Ala Phe Leu Cys Val Phe Glu Gln Leu
    130             135             140
Asp Tyr Asn Glu Asp Glu Tyr Thr Ile Glu Pro Arg Asp Tyr Phe Asn
145             150             155             160
Arg Phe Val Tyr Lys Asn Ser Gln Thr Ala Pro Gln Ile Gln Ser Phe
            165             170             175
Gly Leu Leu His Gly Tyr Glu Glu Met Ser Tyr Ala Ser Asn Asn Ile
            180             185             190
Arg Asn Val Leu Thr His Ser Ile Val Leu Cys Ser Pro Ile Leu Tyr
            195             200             205
Gln Leu Ile Thr Glu Phe Asp Thr Thr Lys Ile His Ala Asp Asp Phe
210             215             220
Asp Cys Leu Ile
225


        <210> 132
        <211> 167
        <212> PRT
        <213> Chlamydia pneumoniae
```

459

<400> 132

```
Ser Ser Met Val Lys Cys Ser Ser Ile Ile His Glu Asn Lys Lys Pro
1           5                   10                  15
Ala Gln Leu Leu Pro Glu Ser Lys Phe Ala Ala Ile Thr Lys Leu Ser
        20                  25                  30
Leu Ala Ile Leu Ser Leu Phe Leu Gly Ile Ala Ala Cys Ile Leu Ile
        35                  40                  45
Ala Leu Ser Gly Leu Leu Pro Asn Thr Leu Leu Ile Ile Ala Leu Ser
    50                  55                  60
Leu Ile Ser Ile Ile Val Leu Ser Thr Gly Ile Ser Leu Leu Ile Gly
65              70                  75                  80
Thr Gln Cys Ser Lys Ser Val Gln Lys Asp Glu Gln Lys Pro Lys Ser
            85                  90                  95
Ile Phe Pro Lys Glu Thr Pro Ser Leu Asp Pro Trp Leu Leu Asn Pro
        100                 105                 110
Leu Lys Asn Lys Ile Gln Ser Ser Glu Thr Leu Leu Leu Asp Pro Thr
        115                 120                 125
Ser Ile Asn Leu Lys Asn Glu Leu Phe Phe Pro Ser Phe Glu Glu Trp
    130                 135                 140
Lys Lys Ile Phe Leu Lys Asp Pro Asp Phe Leu Ile Lys Ser Ala Leu
145             150                 155                 160
Ala Asn Trp Lys Ile Leu Glu
                165
```

<210> 133
<211> 380
<212> PRT
<213> Chlamydia pneumoniae

<400> 133

```
Phe Ser Ser Leu Lys Lys Glu Arg Phe Ser Leu Ser Leu Ala Ile Phe
1           5                   10                  15
Leu Ile Phe Phe Phe Thr Ser Ala Tyr Val Phe Pro Ser Ile Cys Phe
        20                  25                  30
Leu Glu Leu Phe Met Glu Asn Ala Met Ser Ser Ser Phe Val Tyr Asn
        35                  40                  45
Gly Pro Ser Trp Ile Leu Lys Thr Ser Val Ala Gln Glu Val Phe Lys
    50                  55                  60
Lys His Gly Lys Gly Ile Gln Val Leu Leu Ser Thr Ser Val Met Leu
65              70                  75                  80
Phe Ile Gly Leu Gly Val Cys Ala Phe Ile Phe Pro Gln Tyr Leu Ile
            85                  90                  95
Val Phe Val Leu Thr Ile Ala Leu Leu Met Leu Ala Ile Ser Leu Val
        100                 105                 110
Leu Phe Leu Leu Ile Arg Ser Val Arg Ser Ser Met Val Asp Arg Leu
        115                 120                 125
Trp Cys Ser Glu Lys Gly Tyr Ala Leu His Gln His Glu Asn Gly Pro
    130                 135                 140
Phe Leu Asp Val Lys Arg Val Gln Gln Ile Leu Leu Arg Ser Pro Tyr
145             150                 155                 160
Ile Lys Val Arg Ala Leu Trp Pro Ser Gly Asp Ile Pro Glu Asp Pro
            165                 170                 175
Ser Gln Ala Ala Val Leu Leu Leu Ser Pro Trp Thr Phe Phe Ser Ser
        180                 185                 190
Val Asp Val Glu Ala Leu Leu Pro Ser Pro Gln Glu Lys Glu Gly Lys
    195                 200                 205
Tyr Ile Asp Pro Val Leu Pro Lys Leu Ser Arg Ile Glu Arg Val Ser
    210                 215                 220
Leu Leu Val Phe Leu Ser Ala Phe Thr Leu Asp Asp Leu Asn Glu Gln
225             230                 235                 240
```

```
Gly Val Asn Pro Leu Met Asn Asn Glu Glu Phe Leu Phe Phe Ile Asn
        245                 250                 255
Lys Lys Ala Arg Glu His Gly Ile Gln Asp Leu Lys His Glu Ile Met
        260                 265                 270
Ser Ser Leu Glu Lys Thr Gly Val Pro Leu Asp Pro Ser Met Ser Phe
        275                 280                 285
Gln Val Ser Gln Ala Met Phe Ser Val Tyr Arg Tyr Leu Arg Gln Arg
        290                 295                 300
Asp Leu Thr Thr Ser Glu Leu Arg Cys Phe His Leu Leu Ser Cys Phe
305                 310                 315                 320
Lys Gly Asp Val Val His Cys Leu Ala Ser Phe Glu Asn Pro Lys Asp
        325                 330                 335
Leu Ala Asp Ser Asp Phe Leu Glu Ala Cys Lys Asn Val Glu Trp Gly
        340                 345                 350
Glu Phe Ile Ser Ala Cys Glu Lys Ala Leu Leu Lys Asn Pro Gln Gly
        355                 360                 365
Ile Ser Ile Lys Asp Leu Lys Gln Phe Leu Val Arg
370                 375                 380
```

<210> 134
<211> 326
<212> PRT
<213> Chlamydia pneumoniae

<400> 134
```
Ser Met Ile Glu Phe Ala Phe Val Pro His Thr Ser Val Thr Ala Asp
1               5               10                  15
Arg Ile Glu Asp Arg Met Ala Cys Arg Met Asn Lys Leu Ser Thr Leu
        20                  25                  30
Ala Ile Thr Ser Leu Cys Val Leu Ile Ser Ser Val Cys Ile Met Ile
        35                  40                  45
Gly Ile Leu Cys Ile Ser Gly Thr Val Gly Thr Tyr Ala Phe Val Val
        50                  55                  60
Gly Ile Ile Phe Ser Val Leu Ala Leu Val Ala Cys Val Phe Phe Leu
65                  70                  75                  80
Tyr Phe Phe Tyr Phe Ser Ser Glu Glu Phe Lys Cys Ala Ser Ser Gln
                85                  90                  95
Glu Phe Arg Phe Leu Pro Ile Pro Ala Val Val Ser Ala Leu Arg Ser
        100                 105                 110
Tyr Glu Tyr Ile Ser Gln Asp Ala Ile Asn Asp Val Ile Lys Asp Thr
        115                 120                 125
Met Gln Leu Ser Thr Leu Ser Ser Leu Leu Asp Pro Glu Ala Phe Phe
        130                 135                 140
Leu Glu Phe Pro Tyr Phe Asn Ser Leu Ile Val Asn His Ser Met Lys
145                 150                 155                 160
Glu Ala Asp Arg Leu Ser Arg Glu Ala Phe Leu Ile Leu Leu Gly Glu
                165                 170                 175
Ile Thr Trp Lys Asp Cys Glu Thr Lys Ile Leu Pro Trp Leu Lys Asp
                180                 185                 190
Pro Asn Ile Thr Pro Asp Asp Phe Trp Lys Leu Leu Lys Asp His Phe
        195                 200                 205
Asp Leu Lys Asp Phe Lys Lys Arg Ile Ala Thr Trp Ile Arg Lys Ala
        210                 215                 220
Tyr Pro Glu Ile Arg Leu Pro Lys Lys His Cys Leu Asp Lys Ser Ile
225                 230                 235                 240
Tyr Lys Gly Cys Cys Lys Phe Leu Leu Leu Ser Glu Asn Asp Val Gln
                245                 250                 255
Tyr Gln Arg Leu Leu His Lys Val Cys Tyr Phe Ser Gly Glu Phe Pro
        260                 265                 270
Ala Met Val Leu Gly Leu Gly Ser Glu Val Pro Met Val Leu Gly Leu
        275                 280                 285
```

```
Pro Lys Val Pro Lys Asp Leu Thr Trp Glu Met Phe Met Glu Asn Met
    290                 295             300
Pro Val Leu Leu Gln Ser Lys Arg Glu Gly His Trp Lys Ile Ser Leu
305                 310             315                 320
Glu Asp Val Ala Ser Leu
                325


        <210> 135
        <211> 262
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 135
Asn Ser Ser Ala Tyr Met Phe Lys Leu Leu Lys Asn Leu Phe Leu Ile
1               5               10                  15
Gly Cys Cys Ile Val Gly Tyr Phe Trp Met Arg Lys Glu Ser Ile Val
            20              25              30
Glu Gln Trp Leu Ser Asn Arg Leu His Thr Gln Val Thr Val Gly Arg
        35              40              45
Val Ser Ile Arg Thr Ser Gly Ile Lys Ile Arg His Ile Cys Ile His
    50              55              60
Asn Pro Leu Ala Ser Glu Arg Phe Pro Tyr Ala Ala Glu Ile Glu Tyr
65              70              75                  80
Ala Asp Val Arg Phe Ser Ser Ile Ser Met Leu Leu Thr Lys Gln Leu
            85              90                  95
Glu Ile Ser Glu Leu Ile Ile His Gly Ala Asn Phe Thr Ile Phe Pro
        100             105             110
Tyr Asp Ser His Gly Thr Lys Thr Asn Trp Ser Leu Val Trp Lys Asn
    115             120             125
Phe His Pro Gln Lys Glu Thr Pro Ser Asn Leu Trp Ile Asp Arg Ala
    130             135             140
Pro Val Leu Ile Arg Arg Cys Leu Phe Leu Asn Thr Arg Leu Tyr Gly
145             150             155                 160
Leu Arg Ala Asn His Lys Asp Ile Pro His Leu Ser Val Pro Ser Leu
            165             170             175
Glu Phe His Ser His Thr Ser Ser Ala Lys Glu Leu Pro Lys Leu Ser
        180             185             190
Glu Ala Leu Pro Ser Leu Leu Tyr Leu Ala Leu Glu Glu Ser Leu Tyr
        195             200             205
His Leu Asn Leu Pro Gly Asp Ile Ile Lys Pro Leu Ser Gln Gln Ala
    210             215             220
His Lys His Phe Tyr Ser Ser Tyr Pro Gln Phe Gln Asp Arg Leu Asn
225             230             235                 240
Asp Ile Asn Thr Pro Gly Thr Pro Thr Glu Glu Ile Ile Gly Phe Ile
            245             250                 255
Arg Gly Leu Phe Phe His
            260


        <210> 136
        <211> 555
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 136
Phe Ala Asp Tyr Arg Lys Leu Arg Arg Thr Thr Met Ala Ala Lys Asn
1               5               10                  15
Ile Lys Tyr Asn Glu Glu Ala Arg Lys Lys Ile His Lys Gly Val Lys
            20              25              30
Thr Leu Ala Glu Ala Val Lys Val Thr Leu Gly Pro Lys Gly Arg His
        35              40              45
```

462

Val Val Ile Asp Lys Ser Phe Gly Ser Pro Gln Val Thr Lys Asp Gly
    50   55   60
Val Thr Val Ala Lys Glu Ile Glu Leu Glu Asp Lys His Glu Asn Met
65   70   75   80
Gly Ala Gln Met Val Lys Glu Val Ala Ser Lys Thr Ala Asp Lys Ala
                85   90   95
Gly Asp Gly Thr Thr Thr Ala Thr Val Leu Ala Glu Ala Ile Tyr Ser
                100   105   110
Glu Gly Leu Arg Asn Val Thr Ala Gly Ala Asn Pro Met Asp Leu Lys
            115   120   125
Arg Gly Ile Asp Lys Ala Val Lys Val Val Val Asp Glu Leu Lys Lys
    130   135   140
Ile Ser Lys Pro Val Gln His His Lys Glu Ile Ala Gln Val Ala Thr
145   150   155   160
Ile Ser Ala Asn Asn Asp Ser Glu Ile Gly Asn Leu Ile Ala Glu Ala
                165   170   175
Met Glu Lys Val Gly Lys Asn Gly Ser Ile Thr Val Glu Glu Ala Lys
            180   185   190
Gly Phe Glu Thr Val Leu Asp Val Val Glu Gly Met Asn Phe Asn Arg
    195   200   205
Gly Tyr Leu Ser Ser Tyr Phe Ser Thr Asn Pro Glu Thr Gln Glu Cys
    210   215   220
Val Leu Glu Asp Ala Leu Ile Leu Ile Tyr Asp Lys Lys Ile Ser Gly
225   230   235   240
Ile Lys Asp Phe Leu Pro Val Leu Gln Gln Val Ala Glu Ser Gly Arg
            245   250   255
Pro Leu Leu Ile Ile Ala Glu Glu Ile Glu Gly Glu Ala Leu Ala Thr
            260   265   270
Leu Val Val Asn Arg Leu Arg Ala Gly Phe Arg Val Cys Ala Val Lys
    275   280   285
Ala Pro Gly Phe Gly Asp Arg Arg Lys Ala Met Leu Glu Asp Ile Ala
    290   295   300
Ile Leu Thr Gly Gly Gln Leu Val Ser Glu Glu Leu Gly Met Lys Leu
305   310   315   320
Glu Asn Thr Thr Leu Ala Met Leu Gly Lys Ala Lys Lys Val Ile Val
            325   330   335
Thr Lys Glu Asp Thr Thr Ile Val Glu Gly Leu Gly Asn Lys Pro Asp
            340   345   350
Ile Gln Ala Arg Cys Asp Asn Ile Lys Lys Gln Ile Glu Asp Ser Thr
    355   360   365
Ser Asp Tyr Asp Lys Glu Lys Leu Gln Glu Arg Leu Ala Lys Leu Ser
370   375   380
Gly Gly Val Ala Val Ile Arg Val Gly Ala Ala Thr Glu Ile Glu Met
385   390   395   400
Lys Glu Lys Lys Asp Arg Val Asp Asp Ala Gln His Ala Thr Ile Ala
            405   410   415
Ala Val Glu Glu Gly Ile Leu Pro Gly Gly Gly Thr Ala Leu Val Arg
            420   425   430
Cys Ile Pro Thr Leu Glu Ala Phe Leu Pro Met Leu Ala Asn Glu Asp
    435   440   445
Glu Ala Ile Gly Thr Arg Ile Ile Leu Lys Ala Leu Thr Ala Pro Leu
    450   455   460
Lys Gln Ile Ala Ser Asn Ala Gly Lys Glu Gly Ala Ile Ile Cys Gln
465   470   475   480
Gln Val Leu Ala Arg Ser Ala Asn Glu Gly Tyr Asp Ala Leu Arg Asp
                485   490   495
Ala Tyr Thr Asp Met Ile Asp Ala Gly Ile Leu Asp Pro Thr Lys Val
            500   505   510
Thr Arg Ser Ala Leu Glu Ser Ala Ala Ser Ile Ala Gly Leu Leu Leu
    515   520   525

463

Thr Thr Glu Ala Leu Ile Ala Asp Ile Pro Glu Glu Lys Ser Ser Ser
    530   535   540
Ala Pro Ala Met Pro Ser Ala Gly Met Asp Tyr
545   550   555

        <210> 137
        <211> 102
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 137
Met Ser Asp Gln Ala Thr Thr Leu Arg Ile Lys Pro Leu Gly Asp Arg
  1   5   10   15
Ile Leu Val Lys Arg Glu Glu Glu Glu Ala Thr Ala Arg Gly Gly Ile
                20   25   30
Ile Leu Pro Asp Thr Ala Lys Lys Lys Gln Asp Arg Ala Glu Val Leu
            35   40   45
Val Leu Gly Thr Gly Lys Arg Thr Asp Asp Gly Thr Leu Leu Pro Phe
        50   55   60
Glu Val Gln Val Gly Asp Ile Ile Leu Met Asp Lys Tyr Ala Gly Gln
65   70   75   80
Glu Ile Thr Ile Asp Asp Glu Glu Tyr Val Ile Leu Gln Ser Ser Glu
                85   90   95
Ile Met Ala Val Leu Lys
                100

        <210> 138
        <211> 617
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 138
Lys Gly Val Pro Ser Leu Met Thr Thr Glu Leu Lys Thr Glu Ala Leu
  1   5   10   15
Pro Thr Arg Thr Gln Val Asp Pro Lys His Cys Trp Asp Thr Thr Leu
                20   25   30
Met Tyr Ala Asn Arg Glu Glu Trp Lys Lys Asp Phe Asp Leu Cys Ser
            35   40   45
Ser Gly Lys Asp Arg Ser Pro Ile Trp Pro Glu Phe Ser Pro Ser His
        50   55   60
Tyr Gln Ile Asp Asn Pro Glu Ser Leu Leu Glu Leu Leu Ser Lys Lys
65   70   75   80
Phe Ser Val Glu Arg Lys Leu Asp Gln Leu Tyr Ile Tyr Ala His Leu
                85   90   95
Ile His Asp Gln Asp Ile Thr Asn Pro Glu Gly Glu Ser Asp Tyr Gln
                100   105   110
Ser Ile Val Tyr Leu Tyr Thr Leu Phe Ser Gln Glu Ile Ser Trp Ile
            115   120   125
Gln Pro Ala Leu Ile Ala Leu Ser Glu Glu Lys Val Ala Ala Leu Leu
        130   135   140
Ser Ser Ser Val Leu Ala Pro Tyr Arg Phe Tyr Leu Glu Lys Ile Phe
145   150   155   160
Arg Leu Ser Pro His Thr Gly Thr Ala Asn Glu Glu Lys Ile Leu Ala
                165   170   175
Ser Ser Phe Ala Ala Leu Asn Val Ser Asn Lys Ala Phe Ser Ser Leu
            180   185   190
Ser Asp Ala Glu Ile Pro Phe Gly Ile Ala Lys Asp Ser Asn Gly Glu
        195   200   205
Glu His Pro Leu Ser His Ala Leu Ala Ser Leu Tyr Met Gln Ser Pro
        210   215   220

464

Asp Gln Glu Leu Arg Arg Thr Ala Tyr Leu Ala Gln Phe Gln Arg Tyr
225   230   235   240
Tyr Asp Tyr Arg Asn Thr Phe Ala Asn Leu Leu Asn Gly Lys Val Gln
          245   250   255
Ala His Leu Phe Glu Ala Lys Ala Arg Asn Tyr Pro Ser Cys Leu Glu
          260   265   270
Ala Ser Leu Phe Gln His Asn Ile Pro Thr Thr Val Tyr Ile Asn Leu
          275   280   285
Ile Asn Glu Thr Lys Lys His Thr Ser Leu Ile Asn Arg Tyr Phe Asn
          290   295   300
Leu Lys Lys Glu Ala Leu Asn Leu Lys Glu Phe His Phe Tyr Asp Val
305   310   315   320
Tyr Ala Pro Ile Ser Gln Thr Thr Ser Lys Asn Tyr Ser Tyr Glu Glu
          325   330   335
Gly Val Asp Leu Val Cys Lys Ser Leu Leu Pro Leu Gly Thr His Tyr
          340   345   350
Val Glu Ile Leu Arg Asn Gly Leu Leu Ser Asn Arg Trp Val Asp Arg
          355   360   365
Tyr Glu Asn Lys His Lys Arg Ser Gly Ala Tyr Ser Ser Gly Cys Tyr
          370   375   380
Asp Ser Ala Pro Tyr Ile Leu Leu Asn Tyr Thr Asn Thr Leu Tyr Asp
385   390   395   400
Val Ser Val Ile Ala His Glu Ala Gly His Ser Met His Ser Tyr Phe
          405   410   415
Ser Arg Glu Ala Gln Pro Tyr His Asp Ala Gln Tyr Pro Leu Phe Leu
          420   425   430
Ala Glu Ile Ala Ser Thr Phe Asn Glu Met Leu Leu Met Glu Ala Leu
          435   440   445
Ser Lys Ser Asp Gln Ser Lys Glu Asp Lys Ile Val Ile Ile Thr Lys
          450   455   460
Thr Leu Asp Thr Ile Phe Ala Thr Leu Phe Arg Gln Thr Phe Phe Ala
465   470   475   480
Ala Phe Glu Tyr Glu Ile His Ser Ala Ala Glu Gln Gly Thr Pro Leu
          485   490   495
Thr Glu Glu Phe Leu Ser Ala Thr Tyr Gly Asn Leu Gln Lys Glu Phe
          500   505   510
Tyr Gly Gly Val Val Thr Ser Asp Ser Leu Ser Ala Leu Glu Trp Ala
          515   520   525
Arg Ile Pro His Phe Tyr Tyr Asn Phe Tyr Val Tyr Gln Tyr Ala Thr
          530   535   540
Gly Ile Ile Ala Ala Leu Ser Phe Ala Glu Lys Ile Leu Thr Gln Glu
545   550   555   560
Pro Gly Ala Leu Glu Leu Tyr Leu Lys Phe Leu Lys Ser Gly Arg Ser
          565   570   575
Asp Phe Pro Leu Asn Ile Leu Lys Lys Ser Gly Leu Asp Met Thr Thr
          580   585   590
Ser Ala Pro Leu Asp Lys Ala Phe Ala Phe Ile Thr Lys Lys Ile Asp
          595   600   605
Leu Leu Ser Ser Leu Leu Ser Glu Asp
   610   615

<210> 139
<211> 254
<212> PRT
<213> Chlamydia pneumoniae

<400> 139
Val Cys Ser Met Asn Val Ala Asp Leu Leu Ser His Leu Glu Thr Leu
1   5   10   15
Leu Ser Ser Lys Ile Phe Gln Asp Tyr Gly Pro Asn Gly Leu Gln Val
          20   25   30

```
Gly Asp Pro Gln Thr Pro Val Lys Lys Ile Ala Val Ala Val Thr Ala
        35                  40                  45
Asp Leu Glu Thr Ile Lys Gln Ala Val Ala Ala Glu Ala Asn Val Leu
        50                  55                  60
Ile Val His His Gly Ile Phe Trp Lys Gly Met Pro Tyr Pro Ile Thr
65                  70                  75                  80
Gly Met Ile His Lys Arg Ile Gln Leu Leu Ile Glu His Asn Ile Gln
                85                  90                  95
Leu Ile Ala Tyr His Leu Pro Leu Asp Ala His Pro Thr Leu Gly Asn
                100                 105                 110
Asn Trp Arg Val Ala Leu Asp Leu Asn Trp His Asp Leu Lys Pro Phe
        115                 120                 125
Gly Ser Ser Leu Pro Tyr Leu Gly Val Gln Gly Ser Phe Ser Pro Ile
        130                 135                 140
Asp Ile Asp Ser Phe Ile Asp Leu Leu Ser Gln Tyr Tyr Gln Ala Pro
145                 150                 155                 160
Leu Lys Gly Ser Ala Leu Gly Gly Pro Ser Arg Val Ser Ser Ala Ala
                165                 170                 175
Leu Ile Ser Gly Gly Ala Tyr Arg Glu Leu Ser Ser Ala Ala Thr Ser
                180                 185                 190
Gln Val Asp Cys Phe Ile Thr Gly Asn Phe Asp Glu Pro Ala Trp Ser
        195                 200                 205
Thr Ala Leu Glu Ser Asn Ile Asn Phe Leu Ala Phe Gly His Thr Ala
        210                 215                 220
Thr Glu Lys Val Gly Pro Lys Ser Leu Ala Glu His Leu Lys Ser Glu
225                 230                 235                 240
Phe Pro Ile Ser Thr Thr Phe Ile Asp Thr Ala Asn Pro Phe
                245                 250


        <210> 140
        <211> 465
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 140
Thr Asn Ser Arg Leu Phe Leu Ala Ile Lys Asp Gln Leu Leu Gln Asn
1                   5                   10                  15
Met Trp Lys Leu Thr Lys Arg Asn Ser Met Leu Asn Cys Ser Asn Gln
        20                  25                  30
Lys His Thr Val Thr Phe Glu Glu Ala Cys Gln Val Phe Pro Gly Gly
        35                  40                  45
Val Asn Ser Pro Val Arg Ala Cys Arg Ser Val Gly Val Thr Pro Pro
        50                  55                  60
Ile Val Ser Ser Ala Gln Gly Asp Ile Phe Leu Asp Thr His Gly Arg
65                  70                  75                  80
Glu Phe Ile Asp Phe Cys Gly Gly Trp Gly Ala Leu Ile His Gly His
                85                  90                  95
Ser His Pro Lys Ile Val Lys Ala Ile Gln Lys Thr Ala Leu Lys Gly
                100                 105                 110
Thr Ser Tyr Gly Leu Thr Ser Glu Glu Glu Ile Leu Phe Ala Thr Met
        115                 120                 125
Leu Leu Ser Ser Leu Lys Leu Lys Glu His Lys Ile Arg Phe Val Ser
        130                 135                 140
Ser Gly Thr Glu Ala Thr Met Thr Ala Val Arg Leu Ala Arg Gly Ile
145                 150                 155                 160
Thr Asn Arg Ser Ile Ile Ile Lys Phe Ile Gly Gly Tyr His Gly His
                165                 170                 175
Ala Asp Thr Leu Leu Gly Gly Ile Ser Thr Thr Glu Glu Thr Ile Asp
                180                 185                 190
Asn Leu Thr Ser Leu Ile His Thr Pro Ser Pro His Ser Leu Leu Ile
        195                 200                 205
```

466

```
Ser Leu Pro Tyr Asn Asn Ser Gln Ile Leu His His Val Met Glu Ala
    210                 215                 220
Leu Gly Pro Gln Val Ala Gly Ile Ile Phe Glu Pro Ile Cys Ala Asn
225                 230                 235                 240
Met Gly Ile Val Leu Pro Lys Ala Glu Phe Leu Asp Asp Ile Ile Glu
                245                 250                 255
Leu Cys Lys Arg Phe Gly Ser Leu Ser Ile Met Asp Glu Val Val Thr
                260                 265                 270
Gly Phe Arg Val Ala Phe Gln Gly Ala Gln Asp Ile Phe Asn Leu Ser
                275                 280                 285
Pro Asp Ile Thr Ile Tyr Gly Lys Ile Leu Gly Gly Gly Leu Pro Ala
    290                 295                 300
Ala Ala Leu Val Gly His Arg Ser Ile Leu Asp His Leu Met Pro Glu
305                 310                 315                 320
Gly Thr Ile Phe Gln Ala Gly Thr Met Ser Gly Asn Phe Leu Ala Met
                325                 330                 335
Ala Thr Gly His Ala Ala Ile Gln Leu Cys Gln Ser Glu Gly Phe Tyr
                340                 345                 350
Asp His Leu Ser Gln Leu Glu Ala Leu Phe Tyr Ser Pro Ile Glu Glu
    355                 360                 365
Glu Ile Arg Ser Gln Gly Phe Pro Val Ser Leu Val His Gln Gly Thr
    370                 375                 380
Met Phe Ser Leu Phe Phe Thr Glu Ser Ala Pro Thr Asn Phe Asp Glu
385                 390                 395                 400
Ala Lys Asn Ser Asp Val Glu Lys Phe Gln Thr Phe Tyr Ser Glu Val
                405                 410                 415
Phe Asp Asn Gly Val Tyr Leu Ser Pro Ser Pro Leu Glu Ala Asn Phe
                420                 425                 430
Ile Ser Ser Ala His Thr Glu Glu Asn Leu Thr Tyr Ala Gln Asn Ile
    435                 440                 445
Ile Ile Asp Ser Leu Ile Lys Ile Phe Asp Ser Ser Ala Gln Arg Phe
    450                 455                 460
Phe
465


        <210> 141
        <211> 198
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 141
Ser Pro Thr Lys Asn Lys Leu Arg Asp Ile Met Lys Ile Pro Tyr Ala
1                   5                   10                  15
Arg Leu Glu Lys Gly Ser Leu Leu Val Ala Ser Pro Asp Ile Asn Gln
                20                  25                  30
Gly Val Phe Ala Arg Ser Val Ile Leu Leu Cys Glu His Ser Leu Asn
            35                  40                  45
Gly Ser Phe Gly Leu Ile Leu Asn Lys Thr Leu Gly Phe Glu Ile Ser
    50                  55                  60
Asp Asp Ile Phe Thr Phe Glu Lys Val Ser Asn His Asn Ile Arg Phe
65                  70                  75                  80
Cys Met Gly Gly Pro Leu Gln Ala Asn Gln Met Met Leu Leu His Ser
                85                  90                  95
Cys Ser Glu Ile Pro Glu Gln Thr Leu Glu Ile Cys Pro Ser Val Tyr
            100                 105                 110
Leu Gly Gly Asp Leu Pro Phe Leu Gln Glu Ile Ala Ser Ser Glu Ser
    115                 120                 125
Gly Pro Glu Ile Asn Leu Cys Phe Gly Tyr Ser Gly Trp Gln Ala Gly
    130                 135                 140
Gln Leu Glu Lys Glu Phe Leu Ser Asn Asp Trp Phe Leu Ala Pro Gly
145                 150                 155                 160
```

467

Asn Lys Asp Tyr Val Phe Tyr Ser Glu Pro Glu Asp Leu Trp Ala Leu
                165   170   175
Val Leu Lys Asp Leu Gly Gly Lys Tyr Ala Ser Leu Ser Thr Val Pro
                180   185   190
Asp Asn Leu Leu Leu Asn
            195

        <210> 142
        <211> 156
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 142
Pro Arg Ser Asn Gln Gln Lys Ile Phe Cys Met Ser Leu Glu Lys Glu
 1   5   10   15
Leu Leu Glu Glu Thr Pro Leu Val Leu Leu Asn Phe Tyr Lys Leu Val
            20   25   30
Ser Phe Cys Asn Tyr Ala Gly Met Ile Leu Gly Thr Glu Glu Lys Lys
        35   40   45
Phe Ala Ile Tyr Gly His Val Ser Met Gly Gln Ala Phe Gln Gly Ala
    50   55   60
Asp Thr Glu Gly His Ser Pro Gln Arg Pro Phe Ala His Asp Leu Leu
65   70   75   80
Asn Phe Val Phe Ser Gly Phe Asp Ile Gln Val Leu Arg Val Val Ile
                85   90   95
Asn Asp Tyr Lys Asp Asn Val Phe Tyr Thr Arg Leu Phe Leu Glu Gln
                100   105   110
Lys Asp Arg Glu Phe Leu Tyr Val Val Asp Val Asp Ala Arg Pro Ser
            115   120   125
Asp Ser Ile Pro Leu Ala Leu Thr His Lys Ile Pro Ile Leu Cys Val
    130   135   140
Lys Ser Val Phe Asp Ala Val Val Pro Tyr Glu Glu
145   150   155

        <210> 143
        <211> 236
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 143
His Ser Ser Ser Ala Val Glu Lys Asp Leu His Leu His Glu Lys Lys
 1   5   10   15
Cys Leu Ala His Glu Ala Ala Thr Gln Val Thr Ser Gly Met Ile Leu
            20   25   30
Gly Leu Gly Ser Gly Ser Thr Ala Lys Glu Phe Ile Phe Ala Leu Ala
        35   40   45
His Arg Ile Gln Thr Glu Ser Leu Ala Val His Ala Ile Ala Ser Ser
    50   55   60
Gln Asn Ser Tyr Ala Leu Ala Lys Gln Leu Ala Ile Pro Leu Leu Asn
65   70   75   80
Pro Glu Lys Phe Ser Ser Leu Asp Leu Thr Val Asp Gly Ala Asp Glu
                85   90   95
Val Asp Pro Gln Leu Arg Met Ile Lys Gly Gly Gly Gly Ala Ile Phe
            100   105   110
Arg Glu Lys Ile Leu Leu Arg Ala Ala Lys Arg Ser Ile Ile Leu Val
            115   120   125
Asp Glu Ser Lys Leu Val Pro Val Leu Gly Lys Phe Arg Val Pro Leu
    130   135   140
Glu Ile Ser Arg Phe Gly Arg Ser Ala Ile Ile Glu Glu Ile Arg His
145   150   155   160

Leu Gly Tyr Glu Gly Glu Trp Arg Leu Gln Asp Thr Gly Asp Leu Phe
              165   170   175
Ile Thr Asp Ser Ser Asn Tyr Ile Tyr Asp Ile Phe Ser Pro Asn Ser
              180   185   190
Tyr Pro Asn Pro Glu Lys Asp Leu Leu Lys Leu Ile Gln Ile His Gly
          195   200   205
Val Ile Glu Val Gly Phe Val Ile Glu Lys Val Glu Val Trp Ser Ser
    210   215   220
Asn Ser Gln Gly Leu Ile Ser Lys Lys Tyr Ser Val
225   230   235

        <210> 144
        <211> 102
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 144
Ser His Ser Tyr Ser Lys Ser Lys Gly Thr Leu Glu Lys Phe His Phe
1   5   10   15
Lys Ile Leu Gln Leu Leu Ser Thr Lys Asn Ser Ile Leu Asn Phe Cys
              20   25   30
Ser His Phe Glu Ile Ser Arg Val Ser His Asp Asn Ala Ile Gln Lys
          35   40   45
Ile Arg Ser Tyr Pro Leu Lys Pro Ile Ala Glu Asn Arg Ile Asn Thr
    50   55   60
Leu Ser Phe Lys Asp Leu Lys Ile Asp Tyr Pro Lys Asp Ser Ser Lys
65   70   75   80
Arg Phe Arg Phe Leu Tyr Ser Ile Gly Arg Ile Pro Leu His Lys Leu
              85   90   95
Trp Glu Tyr Phe Val Thr
              100

        <210> 145
        <211> 378
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 145
Arg Arg Thr Ile Met Asn Thr Ser Leu Lys Arg Pro Leu Lys Ser His
1   5   10   15
Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu His Leu Lys Lys Thr
              20   25   30
Arg Glu Ser Leu Lys Glu Gly Ser Ile Ser Leu Asp Gln Leu Met Gln
          35   40   45
Ile Glu Asp Ile Ala Ile Gln Asp Leu Ile Lys Lys Gln Lys Ala Ala
    50   55   60
Gly Leu Ser Phe Ile Thr Asp Gly Glu Phe Arg Arg Ala Thr Trp His
65   70   75   80
Tyr Asp Phe Met Trp Gly Phe His Gly Val Gly His His Arg Ala Thr
              85   90   95
Glu Gly Val Phe Phe Asp Gly Glu Arg Ala Met Ile Asp Asp Thr Tyr
              100   105   110
Leu Thr Asp Lys Ile Ser Val Ser His His Pro Phe Val Asp His Phe
          115   120   125
Lys Phe Val Lys Ala Leu Glu Asp Glu Phe Thr Thr Ala Lys Gln Thr
          130   135   140
Leu Pro Ala Pro Ala Gln Phe Leu Lys Gln Met Ile Phe Pro Asn Asn
145   150   155   160
Ile Glu Val Thr Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Glu
              165   170   175

469

Asp Ile Val Ala Gly Tyr Arg Lys Val Ile Arg Asp Leu Tyr Asp Ala
        180   185   190
Gly Cys Arg Tyr Leu Gln Leu Asp Asp Cys Thr Arg Gly Gly Leu Val
        195   200   205
Asp Pro Arg Val Cys Ser Trp Tyr Gly Ile Asp Glu Lys Gly Leu Gln
    210   215   220
Asp Leu Ile Gln Gln Tyr Leu Leu Ile Asn Asn Leu Val Ile Ala Asp
225   230   235   240
Arg Pro Asp Asp Leu Val Val Asn Leu His Val Cys Arg Gly Asn Tyr
                245   250   255
His Ser Lys Phe Phe Ala Ser Gly Ser Tyr Asp Phe Ile Ala Lys Pro
        260   265   270
Leu Phe Glu Gln Thr Asn Val Asp Gly Tyr Tyr Leu Glu Phe Asp His
        275   280   285
Glu Arg Ser Gly Asp Phe Ser Pro Leu Thr Phe Ile Ser Gly Glu Lys
        290   295   300
Thr Val Cys Leu Gly Leu Val Thr Ser Lys Thr Pro Thr Leu Glu Asn
305   310   315   320
Lys Asp Glu Val Ile Ala Arg Ile His Gln Ala Ala Asp Tyr Leu Pro
                325   330   335
Leu Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu
        340   345   350
Ile Gly Asn Lys Leu Thr Glu Glu Glu Gln Trp Ala Lys Val Ala Leu
        355   360   365
Val Lys Glu Ile Ser Glu Glu Val Trp Lys
    370   375

        <210> 146
        <211> 873
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 146
Lys Val Leu Gly Val Asn Phe Met Glu Lys Phe Ser Asp Ala Val Ser
1   5   10   15
Glu Ala Leu Glu Lys Ala Phe Glu Leu Ala Lys Ser Ser Lys His Thr
        20   25   30
Tyr Val Thr Glu Asn His Leu Leu Leu Ala Leu Leu Glu Asn Thr Glu
        35   40   45
Ser Leu Phe Tyr Leu Val Ile Lys Asp Ile His Gly Asn Pro Gly Leu
    50   55   60
Leu Asn Thr Ala Val Lys Asp Ala Leu Ser Arg Glu Pro Thr Val Val
65   70   75   80
Glu Gly Glu Val Asp Pro Lys Pro Ser Pro Gly Leu Gln Thr Leu Leu
                85   90   95
Arg Asp Ala Lys Gln Glu Ala Lys Thr Leu Gly Asp Glu Tyr Ile Ser
        100   105   110
Gly Asp His Leu Leu Leu Ala Phe Trp Ser Ser Asn Lys Glu Pro Phe
        115   120   125
Asn Ser Trp Lys Gln Thr Thr Lys Val Ser Phe Lys Asp Leu Lys Asn
        130   135   140
Leu Ile Thr Lys Ile Arg Arg Gly Asn Arg Met Asp Ser Pro Ser Ala
145   150   155   160
Glu Ser Asn Phe Gln Gly Leu Glu Lys Tyr Cys Lys Asn Leu Thr Ala
                165   170   175
Leu Ala Arg Glu Gly Lys Leu Asp Pro Val Ile Gly Arg Asp Glu Glu
        180   185   190
Ile Arg Arg Thr Ile Gln Val Leu Ser Arg Arg Thr Lys Asn Asn Pro
        195   200   205
Met Leu Ile Gly Glu Pro Gly Val Gly Lys Thr Ala Ile Ala Glu Gly
    210   215   220

470

```
Leu Ala Leu Arg Leu Ile Gln Gly Asp Val Pro Glu Ser Leu Lys Gly
225                 230                 235                 240
Lys Gln Leu Tyr Val Leu Asp Met Gly Ala Leu Ile Ala Gly Ala Lys
              245                 250                 255
Tyr Arg Gly Glu Phe Glu Glu Arg Leu Lys Ser Val Leu Lys Asp Val
          260                 265                 270
Glu Ser Gly Asp Gly Glu His Ile Ile Phe Ile Asp Glu Val His Thr
          275                 280                 285
Leu Val Gly Ala Gly Ala Thr Asp Gly Ala Met Asp Ala Ala Asn Leu
      290                 295                 300
Leu Lys Pro Ala Leu Ala Arg Gly Thr Leu His Cys Ile Gly Ala Thr
305                 310                 315                 320
Thr Leu Asn Glu Tyr Gln Lys Tyr Ile Glu Lys Asp Ala Ala Leu Glu
              325                 330                 335
Arg Arg Phe Gln Pro Ile Phe Val Thr Glu Pro Ser Leu Glu Asp Ala
          340                 345                 350
Val Phe Ile Leu Arg Gly Leu Arg Glu Lys Tyr Glu Ile Phe His Gly
          355                 360                 365
Val Arg Ile Thr Glu Gly Ala Leu Asn Ala Ala Val Leu Leu Ser Tyr
      370                 375                 380
Arg Tyr Ile Pro Asp Arg Phe Leu Pro Asp Lys Ala Ile Asp Leu Ile
385                 390                 395                 400
Asp Glu Ala Ala Ser Leu Ile Arg Met Gln Ile Gly Ser Leu Pro Leu
              405                 410                 415
Pro Ile Asp Glu Lys Glu Arg Glu Leu Ala Ala Leu Ile Val Lys Gln
              420                 425                 430
Glu Ala Ile Lys Arg Glu Gln Ser Pro Ser Tyr Gln Glu Glu Ala Asp
      435                 440                 445
Ala Met Gln Lys Ser Ile Asp Ala Leu Arg Glu Glu Leu Ala Ser Leu
      450                 455                 460
Arg Leu Gly Trp Asp Glu Glu Lys Lys Leu Ile Ser Gly Leu Lys Glu
465                 470                 475                 480
Lys Lys Asn Ser Leu Glu Ser Met Lys Phe Ser Glu Glu Glu Ala Glu
              485                 490                 495
Arg Val Ala Asp Tyr Asn Arg Val Ala Glu Leu Arg Tyr Ser Leu Ile
          500                 505                 510
Pro Gln Leu Glu Glu Glu Ile Lys Gln Asp Glu Ala Ser Leu Asn Gln
          515                 520                 525
Arg Asp Asn Arg Leu Leu Gln Glu Glu Val Asp Glu Arg Leu Ile Ala
      530                 535                 540
Gln Val Val Ala Asn Trp Thr Gly Ile Pro Val Gln Lys Met Leu Glu
545                 550                 555                 560
Gly Glu Ala Glu Lys Leu Leu Ile Leu Glu Glu Ser Leu Glu Glu Arg
              565                 570                 575
Val Val Gly Gln Pro Phe Ala Val Ser Ala Val Ser Asp Ser Ile Arg
          580                 585                 590
Ala Ala Arg Val Gly Leu Asn Asp Pro Gln Arg Pro Leu Gly Val Phe
          595                 600                 605
Leu Phe Leu Gly Pro Thr Gly Val Gly Lys Thr Glu Leu Ala Lys Ala
      610                 615                 620
Leu Ala Asp Leu Leu Phe Asn Lys Glu Glu Ala Met Val Arg Phe Asp
625                 630                 635                 640
Met Ser Glu Tyr Met Glu Lys His Ser Ile Ser Lys Leu Ile Gly Ser
              645                 650                 655
Ser Pro Gly Tyr Val Gly Tyr Glu Glu Gly Gly Ser Leu Ser Glu Ala
          660                 665                 670
Leu Arg Arg Arg Pro Tyr Ser Val Val Leu Phe Asp Glu Ile Glu Lys
      675                 680                 685
Ala Asp Lys Glu Val Leu Asn Ile Leu Leu Gln Val Phe Asp Asp Gly
      690                 695                 700
```

471

```
Ile Leu Thr Asp Gly Lys Lys Arg Lys Val Asn Cys Lys Asn Ala Leu
705             710             715                 720
Phe Ile Met Thr Ser Asn Ile Gly Ser Pro Glu Leu Ala Asp Tyr Cys
            725             730                 735
Ser Lys Lys Gly Ser Glu Leu Thr Lys Glu Ala Ile Leu Ser Val Val
            740             745                 750
Ser Pro Val Leu Lys Arg Tyr Leu Ser Pro Glu Phe Met Asn Arg Ile
            755             760             765
Asp Glu Ile Leu Pro Phe Val Pro Leu Thr Lys Glu Asp Ile Val Lys
        770             775             780
Ile Val Gly Ile Gln Met Arg Arg Ile Ala Gln Arg Leu Lys Ala Arg
785             790             795                 800
Arg Ile Asn Leu Ser Trp Asp Asp Ser Val Ile Leu Phe Leu Ser Glu
            805             810             815
Gln Gly Tyr Asp Ser Ala Phe Gly Ala Arg Pro Leu Lys Arg Leu Ile
            820             825             830
Gln Gln Lys Val Val Ile Leu Leu Ser Lys Ala Leu Leu Lys Gly Asp
            835             840             845
Ile Lys Pro Asp Thr Ser Ile Glu Leu Thr Met Ala Lys Glu Val Leu
        850             855             860
Val Phe Lys Lys Val Glu Thr Pro Ser
865             870
```

        <210> 147
        <211> 551
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 147
```
Asn Cys Ala Ala Ser Phe Ile Trp Leu Asn Lys Ser Ser His Arg Asn
1               5               10                  15
Leu Arg Ser Pro Met Phe Lys Ser Phe Ile Val Arg Tyr Met Phe Val
            20              25              30
Gly Gly Leu Val Ser Phe Leu Leu Pro Ile Pro Asp Leu Glu Cys Ala
            35              40              45
Asn Asn Val Thr Lys Thr Tyr Asp Lys Lys Ala Ser Val Ile Ser Arg
        50              55              60
Asp Leu Lys Leu Gln Glu Asp Cys Gln Lys Phe Trp Asn Leu Asp Pro
65              70              75                  80
Tyr Lys Leu Glu Ser Leu Cys Ala Tyr Gln Val Leu Tyr His Asp Asp
            85              90              95
Tyr Ser Ser Lys Arg Ile Arg Glu Leu Phe Pro Gln Ile Gln Lys Asp
            100             105             110
Glu Val Pro Ile Phe Ala Thr Met Ile Leu Thr Leu Gly Lys Val Asp
            115             120             125
Arg Gly Phe Ser Pro Glu Glu Ile Ser Leu Ile Gln Lys Leu Ser Tyr
        130             135             140
Pro Gly Leu Ser Leu Ala Ser Leu Arg Gly Ser Thr Glu Ile Asp Pro
145             150             155             160
Asn Thr Asp Leu Ala Arg Ala Leu Val Val Ser Glu Phe Ser Gly Asp
            165             170             175
Leu Gly Lys Asn Arg Ala Asp Tyr Tyr Ser Asn Cys Leu Asp Ile Leu
            180             185             190
Ala Leu Arg Ile His Ala Glu Arg Gln Arg Tyr Leu Asp Gln Ser Pro
        195             200             205
Cys Val Pro Gly Thr Ser Glu Phe His Lys Ala Thr Ile Glu Ala Ile
        210             215             220
Asn Thr Ile Leu Phe Tyr Glu Glu Ala Val Arg Tyr Pro Ser Lys Lys
225             230             235             240
Glu Met Phe Ser Asp Glu Phe Ser Phe Leu Ser Ser Val Thr Asp Arg
            245             250             255
```

```
Lys Phe Gly Val Cys Leu Gly Val Ser Ser Leu Tyr Phe Ser Leu Ser
            260                     265                 270
Gln Arg Leu Asp Leu Pro Leu Glu Ala Val Thr Pro Pro Gly His Ile
            275                     280             285
Tyr Leu Arg Tyr Gln Gly Gly Glu Val Asn Ile Glu Thr Thr Ala Gly
            290                     295                 300
Gly Arg His Leu Pro Thr Ala Ser Tyr Cys Asp Cys Leu Asp Leu Glu
305                     310                     315                 320
Asp Leu Gln Val Arg Thr Pro Glu Glu Met Ile Gly Leu Thr Phe Met
                325                     330                 335
Asn Gln Gly Ser Phe Ala Leu Gln Lys Lys Lys Tyr Lys Glu Ala Glu
            340                     345                 350
Glu Ala Tyr Lys Lys Ala Gln Glu Tyr Leu Gly Asp Glu Glu Leu Gln
            355                     360                 365
Glu Leu Leu Gly Phe Val Gln Ile Leu Gly Gly Lys Lys Lys Glu Gly
            370                     375                 380
Lys Ser Leu Ile Gly Lys Ser Pro Arg Ala Ser Gln Lys Gly Ser Val
385                     390                     395                 400
Ala Tyr Asp Tyr Leu Lys Gly Arg Ile Asn Ile Pro Thr Leu Ala Leu
                405                     410                 415
Leu Phe Ser Tyr Pro Gly Ser Asn Tyr Glu Glu Ile Ala Ser Tyr Glu
            420                     425                 430
Glu Glu Leu Lys Lys Ala Met Lys Ser Ser Met Pro Cys Cys Glu Gly
            435                     440                 445
Gln Arg Arg Leu Ala Ser Val Ala Phe His Leu Gly Lys Thr Ala Glu
            450                     455                 460
Ala Val Ala Leu Leu Glu Lys Cys Val Glu Asp Ile Pro Asn Asp Leu
465                     470                     475                 480
Ser Leu His Leu Arg Leu Cys Lys Ile Leu Cys Asp Arg His Glu Tyr
                485                     490                 495
Thr Lys Ala Leu Lys Tyr Phe Ile Ile Ala Glu Arg Leu Met Glu Asp
            500                     505                 510
Gln Gly Phe Leu Lys Lys Asp Asn Arg Ser Phe Ala Leu Phe Tyr Glu
            515                     520                 525
Val Lys Lys Ile Ile Ser Lys Val Ala Pro Gln Lys Ala Asn Thr Leu
            530                     535                 540
Leu Leu Met Glu Ser Glu Arg
545                     550
```

```
        <210> 148
        <211> 167
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 148
Ile Ile Val Gly Ile Ser Met Ser Ser Ser Glu Val Val Phe Gln Thr
 1               5                   10                  15
Val His Gly Leu Gly Phe Gly Gly Leu Ser Ser Lys Ser Val Val Pro
            20                  25                  30
Phe Lys Lys Ser Leu Ser Asp Ala Pro Arg Val Val Cys Ser Ile Leu
        35                  40                  45
Val Leu Thr Leu Gly Leu Gly Ala Leu Val Cys Gly Ile Ala Ile Thr
        50                  55                  60
Cys Trp Cys Val Pro Gly Val Ile Leu Met Gly Gly Ile Cys Ala Ile
65                  70                  75                  80
Val Leu Gly Ala Ile Ser Leu Ala Leu Ser Leu Phe Trp Leu Trp Gly
            85                  90                  95
Leu Phe Ser Asn Cys Cys Gly Ser Lys Arg Val Leu Pro Gly Glu Gly
            100                 105                 110
Leu Leu Arg Asp Lys Leu Leu Asp Gly Gly Phe Ser Arg Ala Ala Pro
            115                 120                 125
```

Ser Gly Met Gly Leu Pro Gly Asp Gly Ser Pro Arg Ala Ser Thr Pro
    130   135   140
Ser Cys Leu Glu Glu Leu Gln Ala Glu Ile Gln Ala Val Thr Gln Ala
145   150   155   160
Ile Asp Gln Met Ser Asp Asp
                165

        <210> 149
        <211> 153
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 149
His Gly Gly Pro Met Ala Val Gln Ser Ile Lys Glu Ala Val Thr Ser
1   5   10   15
Ala Ala Thr Ser Val Gly Cys Val Asn Cys Ser Arg Glu Ala Ile Pro
             20   25   30
Ala Phe Asn Thr Glu Glu Arg Ala Thr Ser Ile Ala Arg Ser Val Ile
     35   40   45
Ala Ala Ile Ile Ala Val Val Ala Ile Ser Leu Leu Gly Leu Gly Leu
     50   55   60
Val Val Leu Ala Gly Cys Cys Pro Leu Gly Met Ala Ala Gly Ala Ile
65   70   75   80
Thr Met Leu Leu Gly Val Ala Leu Leu Ala Trp Ala Ile Leu Ile Thr
             85   90   95
Leu Arg Leu Leu Asn Ile Pro Lys Ala Glu Ile Pro Ser Pro Gly Asn
         100   105   110
Asn Gly Glu Pro Asn Glu Arg Asn Ser Ala Thr Pro Pro Leu Glu Gly
         115   120   125
Gly Val Ala Gly Glu Ala Gly Arg Gly Gly Gly Ser Pro Leu Thr Gln
    130   135   140
Leu Asp Leu Asn Ser Gly Ala Gly Ser
145   150

        <210> 150
        <211> 627
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 150
Gly Lys Trp Trp Arg Val Ser Ser Met Glu Ser Glu Lys Asp Ile Gly
1   5   10   15
Ala Lys Phe Leu Gly Asp Tyr Arg Ile Leu Tyr Arg Lys Gly Gln Ser
             20   25   30
Leu Trp Ser Glu Asp Leu Leu Ala Glu His Arg Phe Ile Lys Lys Arg
             35   40   45
Tyr Leu Ile Arg Leu Leu Leu Pro Asp Leu Gly Ser Ser Gln Pro Phe
     50   55   60
Met Glu Ala Phe His Asp Val Val Val Lys Leu Ala Lys Leu Asn His
65   70   75   80
Pro Gly Ile Leu Ser Ile Glu Asn Val Ser Glu Ser Glu Gly Arg Cys
             85   90   95
Phe Leu Val Thr Gln Glu Gln Asp Ile Pro Ile Leu Ser Leu Thr Gln
         100   105   110
Tyr Leu Lys Ser Ile Pro Arg Lys Leu Thr Glu Leu Glu Ile Val Asp
         115   120   125
Ile Val Ser Gln Leu Ala Ser Leu Leu Asp Tyr Val His Ser Glu Gly
    130   135   140
Leu Ala Gln Glu Glu Trp Asn Leu Asp Ser Val Tyr Ile His Ile Leu
145   150   155   160

                                474

```
Asn Gly Val Pro Lys Val Ile Leu Pro Asp Leu Gly Phe Ala Ser Leu
              165                 170                 175
Ile Lys Glu Arg Ile Leu Asp Gly Phe Ile Ser Asp Glu Glu Asn Arg
          180                 185                 190
Glu Ser Lys Ile Lys Glu Arg Val Leu Leu His Thr Ser Glu Gly Lys
          195                 200                 205
Gln Gly Arg Glu Asp Thr Tyr Ala Phe Gly Ala Ile Thr Tyr Tyr Leu
      210                 215                 220
Leu Phe Gly Phe Leu Pro Gln Gly Ile Phe Pro Met Pro Ser Lys Val
225                 230                 235                 240
Phe Ser Asp Phe Ile Tyr Asp Trp Asp Phe Leu Ile Ser Ser Cys Leu
              245                 250                 255
Ser Cys Phe Met Glu Glu Arg Ala Lys Glu Leu Phe Pro Leu Ile Arg
          260                 265                 270
Lys Lys Thr Leu Gly Glu Glu Leu Gln Asn Val Val Thr Asn Cys Ile
          275                 280                 285
Glu Ser Ser Leu Arg Glu Val Pro Asp Pro Leu Glu Ser Ser Gln Asn
      290                 295                 300
Leu Pro Gln Ala Val Leu Lys Val Gly Glu Thr Lys Val Ser His Gln
305                 310                 315                 320
Gln Lys Glu Ser Ala Glu His Leu Glu Phe Val Leu Val Glu Ala Cys
              325                 330                 335
Ser Ile Asp Glu Ala Met Asp Thr Ala Ile Glu Ser Glu Ser Ser Ser
              340                 345                 350
Gly Val Glu Glu Glu Gly Tyr Ser Leu Ala Leu Gln Ser Leu Leu Val
          355                 360                 365
Arg Glu Pro Val Val Ser Arg Tyr Val Glu Ala Glu Lys Glu Glu Pro
      370                 375                 380
Lys Pro Gln Pro Ile Leu Thr Glu Met Val Leu Ile Glu Gly Gly Glu
385                 390                 395                 400
Phe Ser Arg Gly Ser Val Glu Gly Gln Arg Asp Glu Leu Pro Val His
              405                 410                 415
Lys Val Ile Leu His Ser Phe Phe Leu Asp Val His Pro Val Thr Asn
              420                 425                 430
Glu Gln Phe Ile Arg Tyr Leu Glu Cys Cys Gly Ser Glu Gln Asp Lys
          435                 440                 445
Tyr Tyr Asn Glu Leu Ile Arg Leu Arg Asp Ser Arg Ile Gln Arg Arg
      450                 455                 460
Ser Gly Arg Leu Val Ile Glu Pro Gly Tyr Ala Lys His Pro Val Val
465                 470                 475                 480
Gly Val Thr Trp Tyr Gly Ala Ser Gly Tyr Ala Glu Trp Ile Gly Lys
              485                 490                 495
Arg Leu Pro Thr Glu Ala Glu Trp Glu Ile Ala Ala Ser Gly Gly Val
          500                 505                 510
Ala Ala Leu Arg Tyr Pro Cys Gly Glu Glu Ile Glu Lys Ser Arg Ala
          515                 520                 525
Asn Phe Phe Thr Ala Asp Thr Thr Thr Val Met Ser Tyr Pro Pro Asn
      530                 535                 540
Pro Tyr Gly Leu Tyr Asp Met Ala Gly Asn Val Tyr Glu Trp Cys Gln
545                 550                 555                 560
Asp Trp Tyr Gly Tyr Asp Phe Tyr Glu Ile Ser Ala Gln Glu Pro Glu
              565                 570                 575
Ser Pro Gln Gly Pro Ala Gln Gly Val Tyr Arg Val Leu Arg Gly Gly
          580                 585                 590
Cys Trp Lys Ser Leu Lys Asp Asp Leu Arg Cys Ala His Arg His Arg
          595                 600                 605
Asn Asn Pro Gly Ala Val Asn Ser Thr Tyr Gly Phe Arg Cys Ala Lys
      610                 615                 620
Asn Ile Asn
625
```

<210> 151
<211> 665
<212> PRT
<213> Chlamydia pneumoniae

<400> 151

```
Glu Arg Phe Met Lys Glu Glu Asn Ser Gln Ala His Tyr Leu Ala Leu
1               5                   10                  15
Cys Arg Glu Leu Glu Asp His Asp Tyr Ser Tyr Tyr Val Leu His Arg
            20                  25                  30
Pro Arg Ile Ser Asp Tyr Glu Tyr Asp Met Lys Leu Arg Lys Leu Leu
        35                  40                  45
Glu Ile Glu Arg Ser His Pro Glu Trp Lys Val Leu Trp Ser Pro Ser
    50                  55                  60
Thr Arg Leu Gly Asp Arg Pro Ser Gly Thr Phe Ser Val Val Ser His
65                  70                  75                  80
Lys Glu Pro Met Leu Ser Ile Ala Asn Ser Tyr Ser Lys Glu Glu Leu
            85                  90                  95
Ser Glu Phe Phe Ser Arg Val Glu Lys Ser Leu Gly Thr Ser Pro Arg
            100                 105                 110
Tyr Thr Val Glu Leu Lys Ile Asp Gly Ile Ala Val Ala Ile Arg Tyr
            115                 120                 125
Glu Asp Arg Val Leu Val Gln Ala Leu Ser Arg Gly Asn Gly Lys Gln
    130                 135                 140
Gly Glu Asp Ile Thr Ser Asn Ile Arg Thr Ile Arg Ser Leu Pro Leu
145                 150                 155                 160
Arg Leu Pro Glu Asp Ala Pro Glu Phe Ile Glu Val Arg Gly Glu Val
            165                     170                 175
Phe Phe Ser Tyr Ser Thr Phe Gln Ile Ile Asn Glu Lys Gln Gln Gln
            180                 185                 190
Leu Glu Lys Thr Ile Phe Ala Asn Pro Arg Asn Ala Ala Gly Gly Thr
            195                 200                 205
Leu Lys Leu Leu Ser Pro Gln Glu Val Ala Lys Arg Lys Leu Glu Ile
    210                 215                 220
Ser Ile Tyr Asn Leu Ile Ala Pro Gly Asp Asn Asp Ser His Tyr Glu
225                 230                 235                 240
Asn Leu Gln Arg Cys Leu Glu Trp Gly Phe Pro Val Ser Gly Lys Pro
            245                 250                 255
Arg Leu Cys Ser Thr Pro Glu Glu Val Ile Ser Val Leu Lys Thr Ile
            260                 265                 270
Glu Thr Glu Arg Ala Ser Leu Pro Met Glu Ile Asp Gly Ala Val Ile
            275                 280                 285
Lys Val Asp Ser Leu Ala Ser Gln Arg Val Leu Gly Ala Thr Gly Lys
    290                 295                 300
His Tyr Arg Trp Ala Leu Ala Tyr Lys Tyr Ala Pro Glu Glu Ala Glu
305                 310                 315                 320
Thr Leu Leu Glu Asp Ile Leu Val Gln Val Gly Arg Thr Gly Val Leu
            325                 330                 335
Thr Pro Val Ala Lys Leu Thr Pro Val Leu Leu Ser Gly Ser Leu Val
            340                 345                 350
Ser Arg Ala Ser Leu Tyr Asn Glu Asp Glu Ile His Arg Lys Asp Ile
    355                 360                 365
Arg Ile Gly Asp Thr Val Cys Val Ala Lys Gly Gly Glu Val Ile Pro
    370                 375                 380
Lys Val Val Arg Val Cys Arg Glu Lys Arg Pro Glu Gly Ser Glu Val
385                 390                 395                 400
Trp Asn Met Pro Glu Phe Cys Pro Val Cys His Ser His Val Val Arg
            405                 410                 415
Glu Glu Asp Arg Val Ser Val Arg Cys Val Asn Pro Glu Cys Val Ala
            420                 425                 430
```

476

```
Gly Ala Ile Glu Lys Ile Arg Phe Phe Val Gly Arg Gly Ala Leu Asn
        435                 440                 445
Ile Asp His Leu Gly Val Lys Val Ile Thr Lys Leu Phe Glu Leu Gly
    450                 455                 460
Leu Val His Thr Cys Ala Asp Leu Phe Gln Leu Thr Thr Glu Asp Leu
465                 470                 475                 480
Met Gln Ile Pro Gly Ile Arg Glu Arg Ser Ala Arg Asn Ile Leu Glu
                485                 490                 495
Ser Ile Glu Gln Ala Lys His Val Asp Leu Asp Arg Phe Leu Val Ala
            500                 505                 510
Leu Gly Ile Pro Leu Ile Gly Ile Gly Val Ala Thr Val Leu Ala Gly
        515                 520                 525
His Phe Glu Thr Leu Asp Arg Val Ile Ser Ala Thr Phe Glu Glu Leu
    530                 535                 540
Leu Ser Leu Glu Gly Ile Gly Glu Lys Val Ala His Ala Ile Ala Glu
545                 550                 555                 560
Tyr Phe Ser Asp Ser Thr His Leu Asn Glu Ile Lys Lys Met Gln Asp
                565                 570                 575
Leu Gly Val Cys Ile Ser Pro Tyr His Lys Ser Gly Ser Thr Cys Phe
            580                 585                 590
Gly Lys Ala Phe Val Ile Thr Gly Thr Leu Glu Gly Met Ser Arg Leu
        595                 600                 605
Asp Ala Glu Thr Ala Ile Arg Asn Cys Gly Gly Lys Val Gly Ser Ser
    610                 615                 620
Val Ser Lys Gln Thr Asp Tyr Val Val Met Gly Asn Asn Pro Gly Ser
625                 630                 635                 640
Lys Leu Glu Lys Ala Arg Lys Leu Gly Val Ser Ile Leu Asp Gln Glu
                645                 650                 655
Ala Phe Thr Asn Leu Ile His Leu Glu
                660                 665


        <210> 152
        <211> 1562
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 152
Ile Ile Tyr Tyr Lys Phe Phe Tyr Ser Tyr Asn Cys Pro Tyr Phe Ile
1                 5                 10                  15
Ser Phe Phe Val Leu Leu Gly Val Asn Met Ala Ser Ser Ser Asn Asn
                20                  25                  30
Ser Thr Lys Gln Asp Gly Ile Pro Ser Trp Val Asn Pro Asn Val Gln
        35                  40                  45
Trp Asn Arg Ala Ser Gln Val Gly Asp Gln Glu Ala Asn Ser Leu Thr
    50                  55                  60
Pro Glu Ala Gln Thr Ser Arg Ser Trp Phe Ser Asp Arg Lys His Phe
65                  70                  75                  80
Leu Glu Val Leu Asp Val Ser Leu Glu Glu Met Glu Asn Asn Asp Leu
                85                  90                  95
Lys Lys Tyr Ser Arg Tyr Lys Thr Ile Ile Leu Ile Ala Thr Leu Val
            100                 105                 110
Thr Val Ala Ile Thr Cys Ile Val Pro Ile Ser Met Val Phe Gly Ile
        115                 120                 125
Pro Met Trp Val Pro Cys Leu Ile Leu Phe Gly Ala Gly Leu Ser Ser
    130                 135                 140
Ala Phe Leu Ser His Arg Leu Gln Ser Lys Cys Lys Glu Ile His Leu
145                 150                 155                 160
Arg Tyr Arg Ala Tyr Gln Ile Tyr Arg Gln Gln Leu Leu Ser Gln Tyr
                165                 170                 175
Pro Asp Leu Arg Lys Ser Thr Leu Tyr Lys Tyr Ser Ile Thr His Val
            180                 185                 190
```

477

```
Lys Pro Lys Lys Gly Phe Val Gly Lys Leu Val Glu Asn Leu Arg Pro
        195                 200                 205
Asp Leu His Lys Asn Lys Asp Asp Gly Gly Ala Ala Ala Asp Ser Arg
        210                 215                 220
Leu Asp Phe Ala Gly Tyr Gly Val Lys His Tyr Gln Thr Asp Ala Leu
225                 230                 235                 240
Leu Gly Val Ser Gly Val Asn Ser Val Glu Trp Gln Arg Leu Ala Ser
                245                 250                 255
Leu Ile Met Ser Val Lys Asn Asp Ile Leu Asn Asp Val Gly Ser Arg
            260                 265                 270
Glu Pro Ile Asp Lys Ala Gln Arg Ser Ala Leu Val Val Ser Gly Lys
            275                 280                 285
Asp Ile Gly Gly Glu Ile Gln Pro Gly Gly Ile Leu Asp Ile Ser Arg
        290                 295                 300
Asp Ile Leu Ala Ile Cys Gly Tyr Gly Met Asn Val Gly Val Glu Ala
305                 310                 315                 320
Lys Lys Ala Ile Asp Gln Tyr Lys Lys Trp Tyr Leu Asn Ser Ser Thr
                325                 330                 335
Phe Ile Ala Trp Asn Pro Gln Leu Pro Ala Ile Ala Gln Ser Tyr Leu
            340                 345                 350
Leu Glu Gln Gln Arg His Leu Asp Tyr Ala Ala Lys Ile Phe Gln Asp
        355                 360                 365
Leu Ser Ala Leu Thr Thr Ala His Gly Thr Gly Gln Ala Leu Glu Asp
        370                 375                 380
Leu Asp Ser Leu Leu Cys Tyr Tyr Asp Gln Leu Ile Glu Ser Lys Gly
385                 390                 395                 400
Val Gly Glu Lys Ile Ile Ala Ser Ile His Gln Lys His Leu Asp Leu
                405                 410                 415
Ala Met Gln Asp Ser Cys Asp Gln Glu His Leu Lys Lys Trp Ser Asn
            420                 425                 430
Leu Tyr His Val Phe Ser Ile Thr Ile Lys Glu Phe Thr Glu Gly Lys
        435                 440                 445
Leu Glu Gln Asn Glu Val Val Ser Arg Ile Gln Arg Leu Arg Gly Lys
        450                 455                 460
Leu Glu Lys Ser Lys Cys Ser Ile Leu Gly Asn Cys Arg Thr Asn Ala
465                 470                 475                 480
Glu Tyr Ala Thr Lys Ser Glu Lys Lys Leu Ala Asp Tyr Leu Leu Gln
                485                 490                 495
Ile Gly Asp Arg Glu Pro Phe Leu Thr Gly Met His Lys Ala Ile Ala
            500                 505                 510
Thr Gly Lys Ala Ile Gln Gly Lys Val Glu Gly Val Ile Ser Gln His
            515                 520                 525
Pro Glu Lys Gln Ile Met Met Leu Arg Cys Ser Ile Glu Arg Leu Glu
        530                 535                 540
Gly Met Leu Arg Arg Glu Asp Trp Gly Ala Ile Leu Gln Lys Asn Glu
545                 550                 555                 560
Asp Glu Val Leu Ala Leu Lys Ser Thr Met Glu Ala Gln Leu Gln Gly
                565                 570                 575
Phe Lys Asp Leu Val Gly Thr Trp Glu Gly Lys Tyr Gln Glu Phe Lys
            580                 585                 590
Lys Asn Lys Leu Ser Lys Val Leu Val Tyr Asp Phe Thr Lys Ser Tyr
        595                 600                 605
Ser Asn Leu Leu Asn Arg Leu Glu Val Leu His Ala Glu Ser Ser Thr
        610                 615                 620
Asp Asp Leu Val Leu His Val Asp Arg Met Ser Glu Asp Leu Lys Lys
625                 630                 635                 640
Thr Ile Glu Glu Ile Asp Gly Asn Leu Phe Gln Val Thr Pro Glu Glu
                645                 650                 655
Leu Ser Leu Leu Ala Arg Glu Tyr Gln Gly Leu Met Asn Glu Leu Pro
            660                 665                 670
```

478

```
Leu Ile Val Gln Glu Gly Asn Arg Leu Gln Glu Ala Ile Ser Ser Glu
        675                 680                 685
Gly Val Ser Gln Gly Leu Met Leu Leu Asn Ser Leu Leu Asn Arg Asp
        690                 695                 700
Glu Lys Ile Asn Lys Asn Ile Glu Ser Ser Arg Lys Asn Leu Val Ala
705                 710                 715                 720
Ile Ala Lys Gln Ala Arg Ser Asp Ala Arg Asn Ile Asp Ser Gln Gly
        725                 730                 735
Leu Ala Pro Leu Ile Gln Arg Asn Arg Ala Ser Leu Asp Asn Ile Leu
        740                 745                 750
Gln Asn Met Tyr Leu Phe Asn Gly Ser Ile Arg Asn Ile His Ala Leu
        755                 760                 765
Asp Thr Glu Thr Leu Val Ala Thr Ser Ser Asn Met Phe Ser Ala Met
        770                 775                 780
His Thr Phe Asp Trp Asn Ile Tyr Thr Asn Leu Leu Asp Val Leu Glu
785                 790                 795                 800
Ile Gln Ser Lys Pro Ala Pro Ala Pro Met Glu Asn Pro Asp Leu Pro
        805                 810                 815
Gly Ala Leu Pro Glu Glu Val Gln Asp Ala Val Ala Glu Asp Val Ser
        820                 825                 830
Gly Thr His Arg Leu His His Gln Val Leu Lys Arg Arg Cys Ala Asp
        835                 840                 845
Leu Lys Asn Met Ile Ser Gln Leu Gln Lys Ser Ile Asn Lys Trp Gly
850                 855                 860
Met Ala Lys Ala Ile Val Leu Gly Ile Val Ala Val Leu Phe Cys Val
865                 870                 875                 880
Leu Ser Ala Ile Phe Ile Gly Gln Asn Ile Leu Ser Leu Leu Ile Leu
        885                 890                 895
Ser Cys Val Gly Leu Leu Leu Thr Gln Val Cys Pro Leu Ile Phe Asp
        900                 905                 910
Arg Ile Ser Lys Ser Lys Glu Phe Glu Lys Gln Val Leu Glu Thr Ala
        915                 920                 925
Gln Ser Leu Ile Pro Ala Thr Lys Ile Leu Pro Ser Glu Phe Asn Asn
        930                 935                 940
Lys Asp Leu Asn Arg Leu Ala Lys Leu Gln Asp Asn Leu Asn Leu Glu
945                 950                 955                 960
Gly Phe Gly Pro Thr Trp Ala Arg Asn Ile Val Ser Asp Leu Glu Gly
        965                 970                 975
Ile Pro Thr Lys Glu Lys Ser Leu Lys Asp Leu Thr Lys Glu Phe Arg
        980                 985                 990
Lys Asp Ser Lys Asn Leu Asn Lys Arg Ile Lys Arg Arg Phe Lys Glu
        995                 1000                1005
Gly Leu Gly Gln Glu Ala Pro Val Val Arg Pro Thr Ile Pro Gln Asp
    1010                1015                1020
Ile Arg Gly Ala Glu Val Phe Ala Glu Leu His Arg Glu Leu Glu His
1025                1030                1035                1040
Leu Gln Lys Gln Lys Glu Glu Ile Ser Ile Arg Gly Asp Ala Leu Val
                1045                1050                1055
Gln Glu Arg Met Gly Leu Cys Leu Glu Lys Ser Lys Tyr Asp Asn Glu
                1060                1065                1070
Lys Ala His Ala Ala Ala Met Thr Lys Lys Val Gly Lys Leu Gln Asn
        1075                1080                1085
Ile Asp Arg Leu Gln Lys Asn Asn Glu Thr Tyr Val Arg Ile Gln Asn
        1090                1095                1100
Phe Phe Arg Thr Leu Ile Gln Glu Lys Leu Gly Arg Asp Thr Val Gln
1105                1110                1115                1120
Glu Ile Asp Val Val Lys Glu Ala Lys Glu Leu His Glu Leu Ala Ala
                1125                1130                1135
Ile Ile Tyr Gly Asn Thr Ser Gly Lys Ser Gln Lys Gln Arg Ala Lys
                1140                1145                1150
```

                                    479

```
Lys Gln Phe Lys Glu Asn Val Leu His Ile Ala Gly Lys Gly Gln Leu
         1155                1160                1165
Glu Leu Leu Glu Ala Tyr Leu Asn Val Thr Ala Ser Gln Gly Leu Cys
    1170                1175                1180
Arg His Gln Met Gln Ala Ser Phe Arg Glu Arg Ile Leu Leu Asn Pro
1185                1190                1195                1200
Asp Gly Ala Lys His Gly Glu Ala Glu Arg Thr Leu Ala Ser Arg Glu
              1205                1210                1215
Glu Met Leu Lys Thr Leu Gly Leu Ser Tyr Leu Thr Pro Phe Val Arg
              1220                1225                1230
Phe Ser Ser Pro Glu Ser Thr Gln Ser Gly Tyr Asn Gln Ile Leu Lys
         1235                1240                1245
Val Arg Glu Gln Leu Phe Asp Ile Glu Gln Arg Leu Gln Asn Gln Glu
    1250                1255                1260
Thr Val Ser Pro Glu Asp Tyr Ala Ala Val Gln Ala Ala Leu Ala Ala
1265                1270                1275                1280
Tyr Val Arg Lys His Glu Ser Leu Ile Val Ser Thr Tyr Gly Leu Gly
              1285                1290                1295
Ala Gln Glu Gly Gln Thr Ser Ser Lys Val Thr Thr Leu Met Arg Asp
         1300                1305                1310
Leu His Ala Val Glu Glu Leu Val Glu Met Gly Val Glu Thr Tyr Arg
    1315                1320                1325
Leu Asn Arg Ser Asp Gln Ile Leu His Arg Val His Ser Val Leu His
    1330                1335                1340
Ser His Leu Arg Asp Cys Asp Ser Ser Gly Asn Gly Ile Ile Asp Val
1345                1350                1355                1360
Val Lys Lys Leu Phe Glu Leu Leu Asn Asn Asn Gly Asn Asn Pro Asn
              1365                1370                1375
Asp Pro Glu Cys Gln Lys Tyr Met Gln Ile Leu Leu Asp Ala Pro Val
         1380                1385                1390
Ser Leu Leu Tyr Gly Ala Phe Lys Ser Phe Lys Asn Glu Phe Leu Leu
    1395                1400                1405
Asn Phe Thr Glu Leu Asn Ile Ala Asn Ser Thr Lys Ala Ala Glu Glu
    1410                1415                1420
Glu Ala Lys Arg Tyr Val Glu Glu Lys Gly Arg Gly Phe Glu Thr Tyr
1425                1430                1435                1440
Trp Glu Glu Ala Lys Gln Arg Leu Glu Ala Ile Ala Ala Glu Leu Asp
         1445                1450                1455
Asp Leu Arg Asn Gln Glu Thr Leu Leu Glu Gln Glu Ile Arg Leu Ala
         1460                1465                1470
Asn Leu Lys Ile Ser Ile Phe Ser Asp Leu Asn Leu Arg Glu Lys Val
    1475                1480                1485
Ser Val Glu Lys Ala Ala Leu Glu Glu Glu Ile Gln Gly Ile Gln Glu
    1490                1495                1500
Gln Tyr Ala Glu Met Gln Gly Ile Glu Asp Leu Glu Leu Lys Gln Lys
1505                1510                1515                1520
Phe Glu Asp Leu Gln Lys Lys Leu Glu Ala Leu Glu Glu Arg Leu Leu
         1525                1530                1535
Gln Ile Gly Arg Arg Ile Asp Ser Ser Val Asp Lys Gln Lys Glu Leu
         1540                1545                1550
Leu Gly Leu Leu Gly Arg Glu Glu Ala Ala
    1555                1560
```

          <210> 153
          <211> 518
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 153
```
Cys Tyr Glu Asn Leu Phe His Tyr Pro Arg Ala Ser Met Ala Asp Ile
1                 5                 10                15
```

```
Leu Val Ile Gly Ala Asn Pro Thr Gly Leu Ile Leu Ala Asn Met Leu
          20                  25                  30
Ile Gln His Gly Ile Ser Val Lys Val Ile Asp His Arg Ala Ser Pro
          35                  40                  45
Glu Asp Pro Ser Phe Leu Asp Cys Arg Lys Leu Pro Val Ile Leu Ser
     50                  55                  60
Cys Ser Ser Leu Glu Leu Leu His Asn Ser Glu Met Leu Gly Asp Phe
65                  70                  75                  80
Ile Gln Ala Asn His Lys Ile Phe Gly Ala Arg Tyr His Trp Lys Lys
               85                  90                  95
Arg Thr Leu Leu Phe Lys Phe Ser Gln Ala Thr Asp Ser Pro Val Pro
          100                 105                 110
Phe Ser Leu Ser Thr Thr Tyr Gln Ser Leu Glu Gln His Leu Ile Asp
          115                 120                 125
Glu Phe Leu Lys Arg Gly Gly Val Ile Asp Trp Ser Thr Arg Pro Val
     130                 135                 140
Thr Leu Val Asp Asn Ser Ile Phe Ile Glu Ser Thr Lys Val Ser Gln
145                 150                 155                 160
Asn Phe Glu Asn Arg Glu Ile Tyr Asn Pro Lys Trp Ile Ile Ala Cys
               165                 170                 175
Glu Ala Asp Asn Asn Leu Asp Ile Arg Asp Leu Val Lys Ser Gln Leu
          180                 185                 190
Arg Ala Arg Arg Ile Asn Arg Glu Val Ile Phe Ile Asn Cys Asp Glu
          195                 200                 205
Gly Glu Pro Phe Glu Glu Asp His Ile His Leu Leu Pro Ile Thr Lys
     210                 215                 220
Asn Phe Leu Asn Phe Val Phe Tyr Asn Pro Gln Glu Lys Thr Lys Gln
225                 230                 235                 240
Leu Cys Leu Pro Gln Gly Thr His Ser Ile Ser Pro Lys Leu Lys Gln
          245                 250                 255
Lys Leu Leu Tyr Thr Tyr Asn Leu Val Ile Ser Asp Glu Asn Phe His
          260                 265                 270
Ile Lys Thr Ser His His Ala Phe Pro Pro Glu His Gly Asn Val Leu
          275                 280                 285
Phe Leu Gly Ser Leu Ser Asn Thr Leu Leu Leu Ser Tyr Leu Asn Gly
     290                 295                 300
Ile Asn Thr Asn Ile His Ala Ala Phe Asn Leu Ala Trp Lys Leu Leu
305                 310                 315                 320
Pro Val Leu Lys Lys Ala Ala Leu Lys His Leu Val Ile Thr Lys Glu
          325                 330                 335
Gln Glu Asp Gly Asn Ile Leu Pro Tyr Ile Ser Pro Thr Thr Glu Lys
          340                 345                 350
Arg Ala Lys Lys Leu Pro Phe Ser Arg Phe Tyr Thr Pro Ala Leu Met
          355                 360                 365
Tyr Tyr Phe Leu Lys Gly Cys Arg Lys Phe Asn Thr Thr Gly Glu Glu
     370                 375                 380
Tyr Tyr Tyr Pro Pro His Gln Ala Leu Lys Tyr Arg Ser Ser Asp Ile
385                 390                 395                 400
Ile Lys Met Ser Pro Gln Asp Lys Glu Ile His Gly Pro Gly Pro Gly
               405                 410                 415
Met Arg Ala Ile Asp Ala Arg Leu Glu Asn Gly Ser Phe Leu Leu Asp
          420                 425                 430
Pro Leu Lys Ser Ser Lys His Leu Leu Ile Phe Phe Lys Asp Ile Pro
          435                 440                 445
Asp Leu Lys Glu Ala Leu Gln Glu Glu Tyr Gly Glu Trp Ile Glu Ile
     450                 455                 460
Cys Asn Val Lys Glu Pro Arg Ile Leu Asn Leu Tyr His Ala Asn Pro
465                 470                 475                 480
Asn Ser Leu Phe Ile Ile Arg Pro Asp Arg Tyr Ile Gly Tyr Arg Thr
               485                 490                 495
```

His Thr Phe Lys Leu His Glu Leu Ile Ser Tyr Leu Leu Arg Ile Phe
            500   505   510
Ala Ser Glu Lys Thr Ser
        515

<210> 154
<211> 319
<212> PRT
<213> Chlamydia pneumoniae

<400> 154
Leu Ile Lys Met Arg Lys Val Ala Phe Leu Val Ser Cys Leu Phe Ser
 1   5   10   15
Val Ala Ile Gly Ala Ser Ala Ala Pro Val Arg Val Pro Gly Phe Pro
            20   25   30
Gln Ile Pro Glu Asp Leu Val Gln Ile Lys Thr Glu Val Cys Pro Lys
        35   40   45
Gln Glu Val Cys Leu Ala Val Thr Ile Lys Cys Asp Asp His Asn Leu
    50   55   60
Ile Gly Val Leu His Leu Pro Asn Thr Pro Thr Pro Glu Gly Gly Phe
65   70   75   80
Pro Thr Val Val Leu Phe His Gly Phe Arg Gly Thr Lys Phe Gly Gly
            85   90   95
Leu Thr Gly Ala Tyr Arg Lys Leu Gly Arg Lys Phe Ala Ala Val Gly
            100   105   110
Ile Ala Thr Leu Arg Val Asp Met Ala Gly Cys Gly Asp Ser Glu Gly
        115   120   125
Val Ala Glu Glu Val Pro Ile Glu Thr Tyr Leu Arg Asp Ala Gln Thr
    130   135   140
Ile Leu Glu Thr Val Gln Glu His Pro Asp Leu Asn Ala Tyr Arg Leu
145   150   155   160
Gly Ile Ser Gly Phe Ser Leu Gly Cys His Ile Ala Phe Glu Leu Ala
            165   170   175
Lys Ile Tyr Asn Pro Arg Asp Leu Asn Ile Lys Ala Leu Ser Val Trp
            180   185   190
Ala Pro Ile Ala Asp Gly Gly Ile Leu Leu Lys Glu Leu Tyr Glu Asn
            195   200   205
Phe Ser Lys His Gly Glu Gly Asp Ile Ile Ser Val Gly Lys Asp Phe
    210   215   220
Gly Phe Gly Pro Pro Pro Ile Ile Val Cys Ser Gly Asp Val Asp Leu
225   230   235   240
Leu Ile Arg Ile Gln Asp His Val Thr Ala Asn Ser Leu Pro Thr Lys
            245   250   255
Pro Tyr Ile Leu His Gln Gln Gly Ile Asp Asp Thr Leu Val Ser Arg
            260   265   270
Thr Gln Gln Thr Leu Phe Lys Asn Thr Ala Pro Gly Arg Met Thr Phe
    275   280   285
Ile Ser Tyr Pro Asn Thr Gly His Asn Leu Ala Thr Ala Pro Asp Leu
    290   295   300
Asp Met Ile Leu Asp Gln Ile Val Ser His Phe Gln Arg Thr Leu
305   310   315

<210> 155
<211> 821
<212> PRT
<213> Chlamydia pneumoniae

<400> 155
Asn Met Arg Tyr Asp Pro Asn Leu Ile Glu Lys Lys Trp Gln Gln Phe
 1   5   10   15

482

```
Trp Lys Glu His Arg Ser Phe Gln Ala Asn Glu Asp Glu Asp Lys Val
        20                  25                  30
Lys Tyr Tyr Val Leu Asp Met Phe Pro Tyr Pro Ser Gly Ala Gly Leu
        35                  40                  45
His Val Gly His Leu Ile Gly Tyr Thr Ala Thr Asp Ile Val Ala Arg
        50                  55                  60
Tyr Lys Arg Ala Arg Gly Phe Ser Val Leu His Pro Met Gly Trp Asp
65                  70                  75                  80
Ser Phe Gly Leu Pro Ala Glu Gln Tyr Ala Ile Arg Thr Gly Thr His
                85                  90                  95
Pro Lys Val Thr Thr Gln Lys Asn Ile Ala Asn Phe Lys Lys Gln Leu
                100                 105                 110
Ser Ala Met Gly Phe Ser Tyr Asp Glu Gly Arg Glu Phe Ala Thr Ser
        115                 120                 125
Asp Pro Asp Tyr Tyr His Trp Thr Gln Lys Leu Phe Leu Phe Leu Tyr
    130                 135                 140
Asp Gln Gly Leu Ala Tyr Met Ala Asp Met Ala Val Asn Tyr Cys Pro
145                 150                 155                 160
Glu Leu Gly Thr Val Leu Ser Asn Glu Glu Val Glu Asn Gly Phe Ser
                165                 170                 175
Ile Glu Gly Gly Tyr Pro Val Glu Arg Lys Met Leu Arg Gln Trp Ile
                180                 185                 190
Leu Lys Ile Thr Ala Tyr Ala Asp Lys Leu Leu Glu Gly Leu Asp Ala
        195                 200                 205
Leu Asp Trp Pro Glu Asn Val Lys Gln Leu Gln Lys Asn Trp Ile Gly
    210                 215                 220
Lys Ser Glu Gly Ala Leu Val Thr Phe His Leu Thr Gln Glu Gly Ser
225                 230                 235                 240
Leu Glu Ala Phe Thr Thr Arg Leu Asp Thr Leu Leu Gly Val Ser Phe
                245                 250                 255
Leu Val Ile Ala Pro Glu His Pro Asp Leu Asp Ser Ile Val Ser Glu
                260                 265                 270
Glu Gln Arg Asp Glu Val Thr Ala Tyr Val Gln Glu Ser Leu Arg Lys
        275                 280                 285
Ser Glu Arg Asp Arg Ile Ser Ser Val Lys Thr Lys Thr Gly Val Phe
        290                 295                 300
Thr Gly Asn Tyr Ala Lys His Pro Ile Thr Gly Asn Leu Leu Pro Val
305                 310                 315                 320
Trp Ile Ser Asp Tyr Val Val Leu Gly Tyr Gly Thr Gly Val Val Met
                325                 330                 335
Gly Val Pro Ala His Asp Glu Arg Asp Arg Glu Phe Ala Glu Met Phe
        340                 345                 350
Ser Leu Pro Ile His Glu Val Ile Asp Asp Asn Gly Val Cys Ile His
        355                 360                 365
Ser Asn Tyr Asn Asp Phe Cys Leu Asn Gly Leu Ser Gly Gln Glu Ala
    370                 375                 380
Lys Asp Tyr Val Ile Asn Tyr Leu Glu Met Arg Ser Leu Gly Arg Ala
385                 390                 395                 400
Lys Thr Met Tyr Arg Leu Arg Asp Trp Leu Phe Ser Arg Gln Arg Tyr
                405                 410                 415
Trp Gly Glu Pro Ile Pro Ile Ile His Phe Glu Asp Gly Thr His Arg
                420                 425                 430
Pro Leu Glu Asp Asp Glu Leu Pro Leu Leu Pro Pro Asn Ile Asp Asp
        435                 440                 445
Tyr Arg Pro Glu Gly Phe Gly Gln Gly Pro Leu Ala Lys Ala Gln Asp
    450                 455                 460
Trp Val His Ile Tyr Asp Glu Lys Thr Gly Arg Pro Gly Cys Arg Glu
465                 470                 475                 480
Thr Tyr Thr Met Pro Gln Trp Ala Gly Ser Cys Trp Tyr Tyr Leu Arg
                485                 490                 495
```

483

```
Phe Cys Asp Ala His Asn Ser Gln Leu Pro Trp Ser Lys Glu Lys Glu
        500                 505                 510
Ser Tyr Trp Met Pro Val Asp Leu Tyr Ile Gly Gly Ala Glu His Ala
        515                 520                 525
Val Leu His Leu Leu Tyr Ser Arg Phe Trp His Arg Val Phe Tyr Asp
    530                 535                 540
Ala Gly Leu Val Ser Thr Pro Glu Pro Phe Lys Lys Leu Ile Asn Gln
545                 550                 555                 560
Gly Leu Val Leu Ala Ser Ser Tyr Arg Ile Pro Gly Lys Gly Tyr Val
            565                 570                 575
Ser Ile Glu Asp Val Arg Glu Glu Asn Gly Thr Trp Ile Ser Thr Cys
        580                 585                 590
Gly Glu Ile Val Glu Val Arg Gln Glu Lys Met Ser Lys Ser Lys Leu
        595                 600                 605
Asn Gly Val Asp Pro Gln Val Leu Ile Glu Glu Tyr Gly Ala Asp Ala
    610                 615                 620
Leu Arg Met Tyr Ala Met Phe Ser Gly Pro Leu Asp Lys Asn Lys Thr
625                 630                 635                 640
Trp Ser Asn Glu Gly Val Gly Gly Cys Arg Arg Phe Leu Asn Arg Phe
            645                 650                 655
Tyr Asp Leu Val Thr Ser Ser Glu Val Gln Asp Ile Glu Asp Arg Asp
        660                 665                 670
Gly Leu Val Leu Ala His Lys Leu Val Phe Arg Ile Thr Glu His Ile
        675                 680                 685
Glu Lys Met Ser Leu Asn Thr Ile Pro Ser Ser Phe Met Glu Phe Leu
    690                 695                 700
Asn Asp Phe Ser Lys Leu Pro Val Tyr Ser Lys Arg Ala Leu Ser Met
705                 710                 715                 720
Ala Val Arg Val Leu Glu Pro Ile Ala Pro His Ile Ser Glu Glu Leu
            725                 730                 735
Trp Val Ile Leu Gly Asn Pro Pro Gly Ile Asp Gln Ala Ala Trp Pro
        740                 745                 750
Gln Ile Asp Glu Ser Tyr Leu Val Ala Gln Thr Val Thr Phe Val Val
        755                 760                 765
Gln Val Asn Gly Lys Leu Arg Gly Arg Leu Glu Val Ala Lys Glu Ala
    770                 775                 780
Pro Lys Glu Glu Val Leu Ser Leu Ser Arg Ser Val Val Ala Lys Tyr
785                 790                 795                 800
Leu Glu Asn Ala Gln Ile Arg Lys Glu Ile Tyr Val Pro Asn Lys Leu
            805                 810                 815
Val Asn Phe Val Leu
        820
```

```
Thr Ser Glu Phe Cys Pro Met Met Leu Arg Gly Val His Arg Ile Phe
1               5                   10                  15
Lys Cys Phe Tyr Asp Val Val Leu Val Cys Ala Phe Val Ile Ala Leu
            20                  25                  30
Pro Lys Leu Leu Tyr Lys Met Leu Val Tyr Gly Lys Tyr Lys Lys Ser
        35                  40                  45
Leu Ala Val Arg Phe Gly Leu Lys Lys Pro His Val Pro Gly Glu Gly
    50                  55                  60
Pro Leu Val Trp Phe His Gly Ala Ser Val Gly Glu Val Arg Leu Leu
65                  70                  75                  80
Leu Pro Val Leu Glu Lys Phe Cys Glu Glu Phe Pro Gly Trp Arg Cys
                85                  90                  95
```

484

```
Leu Val Thr Ser Cys Thr Glu Leu Gly Val Gln Val Ala Ser Gln Val
            100                 105                 110
Phe Ile Pro Met Gly Ala Thr Val Ser Ile Leu Pro Leu Asp Phe Ser
            115                 120                 125
Ile Ile Ile Lys Ser Val Val Ala Lys Leu Arg Pro Ser Leu Val Val
130                 135                 140
Phe Ser Glu Gly Asp Cys Trp Leu Asn Phe Ile Glu Glu Ala Lys Arg
145                 150                 155                 160
Ile Gly Ala Thr Thr Leu Val Ile Asn Gly Arg Ile Ser Ile Asp Ser
                165                 170                 175
Ser Lys Arg Phe Lys Phe Leu Lys Arg Leu Gly Lys Asn Tyr Phe Ser
            180                 185                 190
Pro Val Asp Gly Phe Leu Leu Gln Asp Glu Val Gln Lys Gln Arg Phe
            195                 200                 205
Leu Ser Leu Gly Ile Pro Glu His Lys Leu Gln Val Thr Gly Asn Ile
    210                 215                 220
Lys Thr Tyr Val Ala Ala Gln Thr Ala Leu His Leu Glu Arg Glu Thr
225                 230                 235                 240
Trp Arg Asp Arg Leu Arg Leu Pro Thr Asp Ser Lys Leu Val Ile Leu
            245                 250                 255
Gly Ser Met His Arg Ser Asp Ala Gly Lys Trp Leu Pro Val Val Gln
            260                 265                 270
Lys Leu Ile Lys Glu Gly Val Ser Val Leu Trp Val Pro Arg His Val
    275                 280                 285
Glu Lys Thr Lys Asp Val Glu Glu Ser Leu His Arg Leu His Ile Pro
    290                 295                 300
Tyr Gly Leu Trp Ser Arg Gly Ala Asn Phe Ser Tyr Val Pro Val Val
305                 310                 315                 320
Val Val Asp Glu Ile Gly Leu Leu Lys Gln Leu Tyr Val Ala Gly Asp
            325                 330                 335
Leu Ala Phe Val Gly Gly Thr Phe Asp Pro Lys Ile Gly Gly His Asn
            340                 345                 350
Leu Leu Glu Pro Leu Gln Cys Glu Val Pro Leu Ile Phe Gly Pro His
    355                 360                 365
Ile Thr Ser Gln Ser Glu Leu Ala Gln Arg Leu Leu Leu Ser Gly Ala
    370                 375                 380
Gly Leu Cys Leu Asp Glu Ile Glu Pro Ile Ile Asp Thr Val Ser Phe
385                 390                 395                 400
Leu Leu Asn Asn Gln Glu Val Arg Glu Ala Tyr Val Gln Lys Gly Lys
            405                 410                 415
Val Phe Val Lys Ala Glu Thr Ala Ser Phe Asp Arg Thr Trp Arg Ala
            420                 425                 430
Leu Lys Ser Tyr Ile Pro Leu Tyr Lys Asn Ser
            435                 440


        <210> 157
        <211> 70
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 157
Asn Ser Leu Ser Phe Gly Val Pro Phe Leu Glu Lys Leu Lys Ile Ser
1                 5                 10                  15
Leu Ile Pro Ile Glu Glu Met Arg His Glu Leu Phe Met Lys Thr His
            20                  25                  30
Asn Ser Ser Ser Asn Gly Phe Ser Asn Gln Glu Lys Gly Ile Arg Thr
            35                  40                  45
Tyr Phe Lys Ser Asp Leu Leu Gly Tyr Glu Asp Leu Tyr Phe Leu Arg
    50                  55                  60
Glu Asn Ile Asn Pro Asn
65                  70
```

<210> 158
<211> 126
<212> PRT
<213> Chlamydia pneumoniae

<400> 158
Leu Gly Lys Gln Lys Leu Leu Ala Arg His Met Met His Asn Ile Val
1   5   10   15
Val Leu Ser Glu Glu Pro Gly Arg Ser Ala Phe Leu Gly Arg Thr Ala
            20   25   30
Phe Phe Pro Asn Lys Tyr Pro Ile Ala Gln Gly Gly Val Gly Ile Pro
        35   40   45
Ser Thr Ile Gly Asn Leu Phe Thr Ile Trp Tyr Cys Phe Tyr Phe Tyr
    50   55   60
Arg Ala Ala Thr Pro Gln Ser Asp His Pro Asp Gly Cys Gly Phe Ile
65   70   75   80
Leu Leu Glu Arg Leu Lys Glu Leu Gly Ala Gly Phe Phe Tyr Cys Asp
                85   90   95
Leu Arg Glu Ser Asn Thr Thr Gly Phe Thr Leu Phe Phe Glu Gly Ser
            100   ·   105   110
Asn Lys Gly Val Leu Lys Asn His Leu Phe Ile Arg Asp Glu
        115   120   125

<210> 159
<211> 152
<212> PRT
<213> Chlamydia pneumoniae

<400> 159
Phe Ser Phe Val Thr Tyr Lys Glu Ala Leu Met Asn Ile Tyr Gln Phe
1   5   10   15
Ser Pro Gly Ala Ser Pro Asn Trp Gln Ala Ser Leu Met Ala Gln Leu
            20   25   30
Asn Ser Tyr Phe Cys Leu Gly Gly Glu Thr Val Thr Arg Ile Ile Ser
        35   40   45
Leu Arg Pro Ser Gly Leu Ile Leu Ala Lys Lys Glu Lys Ala Val Val
    50   55   60
Ser Thr Ala Glu Lys Ile Leu Lys Ile Leu Ser Phe Ile Leu Phe Pro
65   70   75   80
Leu Val Leu Ile Ala Leu Ala Ile Arg Tyr Leu Leu Tyr Asn Lys Phe
                85   90   95
Asn Lys Asp Leu Asp Arg Ala Val Phe Phe Ile Pro Thr Glu Ile Thr
        100   105   110
Lys Ala Glu Glu Leu Ile Ile Ala Lys Asn Pro Ala Leu Val Lys Glu
    115   120   125
Ala Ala Leu Thr Val Ser Pro Leu Phe Tyr Ser Leu Pro Lys Lys Tyr
    130   135   140
Gln Leu Met Lys Val Glu Thr Pro
145   150

<210> 160
<211> 190
<212> PRT
<213> Chlamydia pneumoniae

<400> 160
Pro Pro Lys Ile Thr Leu Ser Ile Asn Ile Asp Leu Leu Leu Glu Asp
1   5   10   15
Leu Asp Thr Asp Ser Ile Pro Trp Pro Lys Leu Tyr Leu Ser Glu Asp
            20   25   30

```
Phe Asp Phe Ala Tyr Tyr Pro Glu Ser Lys Ala Ile Ile Asp Thr Val
        35                  40                  45
Ala Lys Leu Glu Lys Asn Asn Pro Gly Glu Glu Phe Cys Leu Glu Ser
    50                  55                  60
Lys Lys Ile Leu Ala Arg Tyr Leu Leu Glu Gln Leu Phe Lys Leu Glu
65                  70                  75                      80
Thr Gly Leu Asn Phe Pro Thr Ser Thr Ile Asp Gly Gly Arg Glu Ser
                85                  90                  95
Phe Leu Ile Glu Phe Ser His Glu Thr Lys Lys Pro Thr Val Trp Ala
            100                 105                 110
Phe Ile Tyr Phe Tyr Tyr Tyr His Ser Asn Gly Pro Lys Leu Glu Lys
        115                 120                 125
Asp Phe Lys Gln Ala Gly Cys Glu Val His Asn Arg Leu Leu Asn Leu
    130                 135                 140
Gly Leu Lys Tyr Arg Pro Gln Ala Gly Ala Gln Asn Asp Gly Arg Asn
145                 150                 155                     160
Gly Gly Pro Tyr Gly Pro Ile Gly Phe Leu Ile Val Trp Glu Glu Asn
                165                 170                 175
Tyr Gly Ser Val Leu Lys Asp His Gly Phe Ile Lys Asp Asn
            180                 185                 190


        <210> 161
        <211> 115
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 161
Cys Cys Phe Gly Gly Glu Thr Ala Thr Arg Ile Phe Ser Met Thr Pro
1                 5                   10                  15
Ser Gly Phe Ser Leu Ala Thr Glu Glu Lys Val Gln Val Ser Thr Ala
        20                  25                  30
Glu Lys Val Ile Lys Ile Leu Ala Leu Ile Phe Phe Pro Ile Ile Leu
        35                  40                  45
Ile Ala Leu Ala Ile Arg Tyr Phe Leu His Arg Lys Phe Asp Arg Lys
    50                  55                  60
Cys Phe Val Ile Pro Gln Asp Thr Pro Lys Glu Leu Glu Leu Ile Leu
65                  70                  75                      80
Ala Ala Asn Pro Gln Leu Val Glu Lys Ala Ala Arg Glu Val His Pro
                85                  90                  95
Gly Phe Phe Ala Leu Pro Thr Lys Tyr Gln Ser Met Tyr Ile Gln Thr
            100                 105                 110
Ser Lys Gly
        115


        <210> 162
        <211> 556
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 162
Thr Val Glu Leu Leu Ser Leu Asn Lys Ser Tyr Phe Glu Ile Gln Arg
1                 5                   10                  15
Leu Arg Tyr Arg Pro Glu Ile Leu Thr Leu Leu Glu Thr Ile Arg Ser
        20                  25                  30
Lys His Ile Gln Glu Thr Ser Ser Pro Pro Ser Pro Pro Pro Glu Leu
        35                  40                  45
Gln Lys His Ile Pro Asn Leu Cys Arg Ile Pro Glu Val Ser Ile Tyr
    50                  55                  60
Thr Glu Gln Glu Thr Ser Ser Lys Pro Leu Lys Ile Gly Val Leu Leu
65                  70                  75                      80
```

```
Ser Gly Gly Gln Ala Pro Gly Gly His Asn Val Val Ile Gly Leu Phe
             85                  90                 95
Asp Ala Leu Arg Val Phe Asn Pro Lys Thr Arg Leu Phe Gly Phe Ile
            100                 105                110
Lys Gly Pro Leu Gly Leu Thr Arg Gly Leu Tyr Lys Asp Leu Asp Ile
            115                 120                125
Ser Val Ile Tyr Asp Tyr Tyr Asn Met Gly Gly Phe Asp Met Leu Ser
            130                 135             140
Ser Ser Arg Glu Lys Ile Lys Thr Glu Glu Gln Lys Lys Asn Ile Leu
145                 150                 155                160
Asn Thr Val Lys Gln Leu Lys Leu Asp Gly Leu Leu Ile Ile Gly Gly
            165                 170                 175
Asn Asn Ser Asn Thr Asp Thr Ala Met Leu Ala Glu Tyr Phe Leu Ala
            180                 185                190
His Asn Cys Lys Thr Ser Val Ile Gly Val Pro Lys Thr Ile Asp Gly
            195                 200                 205
Asp Leu Lys Asn Cys Trp Ile Glu Thr Ser Leu Gly Phe His Thr Ser
            210                 215                220
Cys Arg Thr Tyr Ser Glu Met Ile Gly Asn Leu Ala Lys Asp Ala Leu
225                 230                 235                240
Ser Ala Lys Lys Tyr His His Phe Ile Arg Leu Met Gly Gln Gln Ala
            245                 250                 255
Ser Tyr Thr Thr Leu Glu Cys Gly Leu Gln Thr Leu Pro Asn Ile Ala
            260                 265                 270
Leu Ile Ser Glu Leu Ile Ala Thr Arg Lys Ile Ser Leu Lys Gln Leu
            275                 280                 285
Ser Glu Gln Leu Ala Leu Gly Leu Val Arg Arg Tyr Lys Ser Gly Lys
            290                 295                 300
Asn Tyr Ser Thr Val Leu Ile Pro Glu Gly Leu Ile Glu His Ile Phe
305                 310                 315                320
Asp Thr Arg Lys Leu Ile Asp Glu Leu Asn Val Leu Leu Ala Asn Gly
            325                 330                 335
Asp Ser Ser Ile Glu Lys Ile Leu Ser Lys Leu Ser Pro Glu Thr Leu
            340                 345                 350
Lys Thr Phe His Leu Phe Pro Lys Asp Ile Ala Asn Gln Leu Leu Leu
            355                 360                 365
Ala Arg Asp Ser His Gly Asn Val Arg Val Ser Lys Ile Ala Thr Glu
370                 375                 380
Glu Leu Leu Ala Val Met Val Lys Lys Glu Ile Glu Lys Ile Lys Pro
385                 390                 395                400
His Met Glu Phe His Ser Val Ser His Phe Phe Gly Tyr Glu Ala Arg
            405                 410                415
Ala Gly Phe Pro Ser Asn Phe Asp Cys Asn Tyr Gly Ile Ala Leu Gly
            420                 425             430
Ile Ile Ser Ala Leu Phe Leu Val Arg Gln Lys Thr Gly Tyr Met Ile
            435                 440             445
Thr Ile Asn Asn Leu Ala Gln Ser Tyr Thr Glu Trp Gln Gly Gly Ala
            450                 455             460
Thr Pro Leu Tyr Lys Met Met His Leu Glu Asn Arg Cys Gly Thr Glu
465                 470                 475                480
Thr Pro Val Ile Lys Thr Asp Ser Val Asp Pro Lys Ser Pro Ala Val
            485                 490             495
Gln His Leu Leu Gln Gln Ser Asp Ser Cys Leu Val Glu Asp Leu Tyr
            500                 505             510
Arg Phe Pro Gly Pro Leu Gln Tyr Phe Gly Lys Glu Glu Leu Ile Asp
            515                 520             525
Gln Arg Pro Leu Thr Leu Leu Trp Glu Asn Gln Thr His Ser Pro Phe
            530                 535             540
Gln Ala Leu Tyr Ser Thr Ser Gly Lys Arg Ser Leu
545                 550                 555
```

<210> 163
<211> 287
<212> PRT
<213> Chlamydia pneumoniae

<400> 163

```
His Arg Ser Ser Thr Ser Arg Lys Gln Glu Pro Leu Leu Ile Thr Gly
1               5                   10                  15
Val Val Leu Glu Lys His Glu Gln Arg Thr Met Phe Ser Leu Thr Leu
            20                  25                  30
Leu Asn Asn Phe Thr Thr Phe Gly Leu Leu His Thr Pro Leu His Tyr
        35                  40                  45
Asn Pro Pro Tyr Pro Ile Val Ile Leu Leu His Gly Leu Ala Ser Asp
    50                  55                  60
Lys Thr Gly Ser Lys Arg Ser His Val Arg Leu Ala Gln Glu Leu Thr
65                  70                  75                  80
Arg Leu Gly Ile Ala Ala Leu Arg Val Asp Leu Leu Gly His Gly Asp
                85                  90                  95
Cys Glu Gly Glu Leu Met Asp Phe Ser Leu Glu Asn Tyr Lys Gln Asn
            100                 105                 110
Ile Arg Glu Ile Ile Glu Tyr Thr His Ser Leu Leu His Ile Asp Gln
        115                 120                 125
Glu Arg Leu Ala Ile Phe Gly Ser Ser Leu Gly Gly Thr Leu Ala Leu
    130                 135                 140
Gln Thr Leu Pro Phe Phe Asn Lys Ile Lys Ala Leu Ala Val Trp Ala
145                 150                 155                 160
Pro Thr Ile Ser Gly Glu Leu Met Ala Ala Glu Ala Gln Lys Asn Ala
                165                 170                 175
Pro Glu Val Ile Thr Met Ser Gln Lys Gly Ala Ile Thr Tyr Ala Gly
                180                 185                 190
Met Thr Leu Asn Pro Asp Phe Tyr Thr Gln Phe Leu Lys Ile Asp Ile
            195                 200                 205
Val Lys Glu Leu Met Pro Ser Ala Arg Asn Leu Pro Pro Ile Leu Tyr
        210                 215                 220
Met Gln Gly Glu Gln Asp Leu Leu Val Ser Ile Asn His Arg Thr Leu
225                 230                 235                 240
Phe Thr Glu Ala Phe Ala Asn Gln Asp Lys Pro Ile Thr Ile Leu Thr
                245                 250                 255
Tyr Pro Asp Val Asp His Ala Phe Pro Phe Ala Glu Ser Ser Ala Leu
            260                 265                 270
Ser Asp Leu Thr Gln Trp Leu Lys Arg Glu Leu Thr Ser Gly Glu
        275                 280                 285
```

<210> 164
<211> 356
<212> PRT
<213> Chlamydia pneumoniae

<400> 164

```
Phe Val Tyr Thr Leu Tyr Asn Ile Gln Ser Pro Phe Arg Ile Met Lys
1               5                   10                  15
Leu Tyr Ser Ile Ser Ser Asp Val Asp Thr Pro Trp Ile Phe Gln Leu
            20                  25                  30
Met Ser Lys Val Asp Ser Tyr Leu Phe Leu Gly Gly Asn Arg Ile Lys
        35                  40                  45
Val Val Ser Ile Val Met Gln Glu Pro Asn Leu Ile Ile Gly Lys Val
    50                  55                  60
Glu Asn Val Arg Ile Ser Thr Ile Val Lys Ile Leu Lys Ile Leu Ser
65                  70                  75                  80
Phe Leu Ile Phe Pro Leu Ile Leu Ile Ala Leu Ala Leu His Tyr Phe
                85                  90                  95
```

Leu His Ala Lys Tyr Ala Asn His Leu Leu Val Ser Lys Ile Leu Glu
              100   105   110
Arg Ala Pro Gln Tyr Val Pro Ile Pro Gly Arg Ser Gly Asp Thr Ala
              115   120   125
Ser His Tyr Lys Leu Thr Thr Leu Val Pro Val Ser Gln Lys Asn Leu
              130   135   140
Gln Ala Met Gly Ser Asn Pro Leu Glu Val Glu Ala Ala Leu Arg Thr
145   150   155   160
Thr Lys Pro Ser Phe Phe Cys Val Pro Ala Lys Tyr Arg Gln Ile Ile
                  165   170   175
Ile Ser Ser His Gly Ile Arg Phe Ser Leu Asp Leu Glu Gln Leu Ala
                  180   185   190
Asp Asp Ile Asn Leu Asp Ser Val Ser Trp Pro Thr Glu Tyr Leu Asn
              195   200   205
Ser Thr Met Asp Phe Cys Ser Lys Ala Asp Lys Arg Val Ile Gln Asn
      210   215   220
Val Gln Asn Leu Arg Thr Gly Thr Tyr Ile Asn Ser Val Gly Lys Arg
225   230   235   240
Ser Leu Leu Lys Phe Met Leu Gln His Leu Phe Ile Asp Gly Ile Thr
                  245   250   255
Gln Glu Asn Pro Glu Ala Leu Pro Asn Asn Thr Ser Gly Arg Leu Thr
              260   265   270
Leu Phe Pro Ser Val Arg Tyr Ile Tyr Ser His Phe Thr Pro Gln Asn
          275   280   285
Pro Thr Ile Trp Pro Gln Val Phe Phe Arg Gln Gly Pro Leu Asp Glu
      290   295   300
Asp Arg Gly Gly Gly Phe Glu Ile Leu Glu Gln Leu Gln Glu Leu Gly
305   310   315   320
Val Arg Phe Pro Ile Cys Pro Ser Gln Gly Pro Asp Asn Pro Asn Phe
                  325   330   335
Gln Gly Phe Gln Gly Ile Arg Ile Tyr Trp Glu Asp Ser Tyr Gln Pro
              340   345   350
Asn Lys Glu Val
          355

        <210> 165
        <211> 189
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 165
Phe Glu Lys Ala Ile Val Tyr Cys Ile Lys Cys Lys Gln Ile Ile Lys
1   5   10   15
Cys Ile Ser Ile Ile His Thr Pro Thr Pro Ala Thr Pro Leu Cys Thr
              20   25   30
Glu Gly Glu Ile Phe Pro Gly Pro Val Asp Ser Ala Ile Gln Asn Asp
          35   40   45
Leu Glu Arg Leu Leu Thr Val Lys Lys Arg Pro Asp Ile Ile Arg Glu
      50   55   60
Tyr Leu Met Arg Ala Gly Gly Ser Leu Val Thr Thr Tyr Pro Lys Glu
65   70   75   80
Gly Gln Arg Leu Arg Ser Pro Glu Gln Leu Arg Val Leu Asp Asp Leu
              85   90   95
Val Gln Ser Tyr Pro Asn His Leu His Ala Ile Glu Leu Asp Cys Gly
          100   105   110
Ala Ile Pro Gln Asp Leu Ile Gly Ala Thr Tyr Ile Ile Thr Phe Ala
      115   120   125
Asp Phe Ser Thr Tyr Ile Leu Ser Leu Arg Ser Tyr Gln Ala Asn Ser
      130   135   140
Pro Ser Asp Asp Thr Trp Gly Ile Trp Phe Gly Ser Ile Asp Asp Pro
145   150   155   160

                            490

Val Gln Ala Val Ile Ser Phe Leu Lys Asp His Gly Phe Ala Leu Pro
                165   170   175
Ser Thr Leu Ala Gln Asp Pro Leu Leu Cys Thr Asn Lys
            180   185

<210> 166
<211> 185
<212> PRT
<213> Chlamydia pneumoniae

<400> 166
Leu Cys Phe Lys Cys Ile Tyr Ile Lys Ile Ile Phe Ser Phe Leu Lys
1   5   10   15
Gln Leu Met Thr Arg Ser Thr Ile Glu Ser Ser Asp Ser Leu Cys Ser
            20   25   30
Arg Ser Phe Ser Gln Lys Leu Ser Val Gln Thr Leu Lys Asn Leu Cys
            35   40   45
Glu Ser Arg Leu Met Lys Ile Thr Ser Leu Val Ile Ala Phe Leu Thr
            50   55   60
Leu Ile Val Gly Gly Ala Leu Ile Ala Leu Ala Gly Gly Gly Val Leu
65   70   75   80
Ser Phe Pro Leu Gly Leu Ile Leu Gly Ser Val Leu Val Leu Phe Ser
            85   90   95
Ser Ile Tyr Leu Val Ser Cys Cys Lys Phe Phe Thr Leu Lys Glu Met
            100   105   110
Thr Met Thr Cys Ser Val Lys Ser Lys Ile Asn Ile Trp Phe Glu Lys
            115   120   125
Gln Arg Asn Lys Asp Ile Glu Lys Ala Leu Glu Asn Pro Asp Leu Phe
            130   135   140
Gly Glu Asn Lys Arg Asn Val Gly Asn Arg Ser Ala Arg Asn Gln Leu
145   150   155   160
Glu Met Ile Leu His Glu Thr Asp Gly Ile Ile Leu Lys Arg Tyr Met
            165   170   175
Lys Gly Ala Lys Met Tyr Phe Tyr Leu
            180   185

<210> 167
<211> 200
<212> PRT
<213> Chlamydia pneumoniae

<400> 167
Asn Val Leu Leu Phe Met Asn Trp Val Pro Lys Thr Ile Asp His Val
1   5   10   15
Asp Pro Glu Ser Glu Ile Asp Ile Arg Lys Val Val Ser Cys Tyr Lys
            20   25   30
Leu Ile Lys Glu Cys Gln Pro Glu Phe Arg Ser Leu Ile Ser Glu Leu
            35   40   45
Leu Gly Val Ile Arg Cys Gly Leu Arg Leu Leu Lys Arg Ser Lys Tyr
            50   55   60
Gln Glu Gln Ala Arg Thr Val Ser Asp Glu Asp Ala Pro Leu Phe Cys
65   70   75   80
Leu Thr Arg Ser Tyr Tyr Gln Asp Gly Tyr Leu Thr Pro Leu Arg Ala
            85   90   95
Gly Pro Arg Asp Leu Ile Asn His Tyr Ile His Leu Arg Arg Arg Glu
            100   105   110
Asn Pro Lys His Phe Phe Ser Pro Lys His Pro Cys Tyr Tyr Ala Arg
            115   120   125
Leu Ala Phe Asn Glu Ser Val Cys Val Tyr Arg Glu Leu Phe Asp Ile
            130   135   140

491

```
Glu Arg Leu Thr Lys Met Tyr Val Glu Gly Asp Tyr Ser Lys Glu Gln
 145                 150                 155                 160
Glu Lys Asn Leu Gln Ala Ile Leu Ser Phe Val Lys Thr Leu Asp Glu
                165                 170                 175
Gly Lys Asp Phe Leu Ile Glu His Lys Asp Thr Asp Leu Ile Gly Arg
                180                 185                 190
Gly Phe Thr Asp Val Phe Cys Thr
            195                 200


        <210> 168
        <211> 123
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 168
Asn Cys Leu Lys Gln Tyr Asn Lys Ser Asp Ser Ile Met Ser Glu Ser
 1               5                   10                  15
Ile Asn Arg Ser Ile His Leu Glu Ala Ser Thr Pro Phe Phe Ile Lys
                20                  25                  30
Leu Thr Asn Leu Cys Glu Ser Arg Leu Val Lys Ile Thr Ser Leu Val
            35                  40                  45
Ile Ser Leu Leu Ala Leu Val Gly Ala Gly Val Thr Leu Val Val Leu
            50                  55                  60
Phe Val Ala Gly Ile Leu Pro Leu Leu Pro Val Leu Ile Leu Glu Ile
 65                 70                  75                  80
Ile Leu Ile Thr Val Leu Val Leu Leu Phe Cys Leu Val Leu Glu Pro
                85                  90                  95
Tyr Leu Ile Glu Lys Pro Ser Lys Ile Lys Glu Leu Pro Lys Val Asp
                100                 105                 110
Glu Leu Ser Val Val Glu Thr Asp Ser Thr Leu
            115                 120


        <210> 169
        <211> 111
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 169
Asn Leu Trp Ser His Phe Pro Arg Gly Phe Phe Met Leu Pro Phe Cys
 1               5                   10                  15
Pro Thr Ile Leu Leu Ala Lys Pro Phe Leu Asn Ser Glu Asn Tyr Gly
                20                  25                  30
Leu Glu Arg Leu Ala Ala Thr Val Asp Ser Tyr Phe Asp Leu Gly Gln
            35                  40                  45
Ser Gln Ile Val Phe Leu Ser Lys Gln Asp Gln Gly Ile Thr Val Glu
            50                  55                  60
Glu Leu Ser Ala Lys Asp Arg Lys Phe Lys Pro Gly Ser Met Asn Cys
 65                 70                  75                  80
Thr Leu Tyr Thr Glu Asp Pro Ile Leu Pro Ala His Asn Ser Phe Ser
                85                  90                  95
Asn Cys Ser Asp Ile Gln Met Arg Thr Pro Ile Ser Pro Ile His
                100                 105                 110


        <210> 170
        <211> 100
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 170
Ser Tyr Ile Asn Leu Arg Arg Arg Glu Asn Pro Glu His Phe Phe Asn
 1               5                   10                  15
```

492

```
Pro Gly His Pro Cys Tyr Tyr Ala Arg Leu Ala Phe Asn Glu Ser Val
            20                  25                  30
Arg Ile Tyr Arg Lys Leu Phe Asn Thr Ala Glu Leu Lys Gln Met Tyr
        35                  40                  45
Gly Ala Gly Asp Tyr Glu Gln Gln Asn Glu Asp Asn Leu Lys Ser Ile
    50                  55                  60
Leu Ser Phe Val Gln Ile Leu Asp Glu Lys Asp Gly Phe Asp Asp Phe
65                  70                  75                  80
Leu Ala Thr His Lys Asp Thr Thr Phe Ile Gly Arg Gly Gly Ala Asp
            85                  90                  95
Ile Phe Cys Ser
            100


        <210> 171
        <211> 276
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 171
Ser Phe His Ile Glu Phe Thr Ile Gly Glu Asn Asn Met Lys Asn Val
1               5                  10                  15
Gly Ser Glu Cys Ser Gln Pro Leu Val Met Glu Leu Asn Thr Gln Pro
            20                  25                  30
Leu Arg Asn Leu Cys Glu Ser Arg Leu Val Lys Ile Thr Ser Phe Val
        35                  40                  45
Ile Ala Leu Leu Ala Leu Val Gly Gly Ile Thr Leu Thr Ala Leu Ala
    50                  55                  60
Gly Ala Gly Ile Leu Ser Phe Leu Pro Trp Leu Val Leu Gly Ile Val
65                  70                  75                  80
Leu Val Val Leu Cys Ala Leu Phe Leu Leu Phe Ser Tyr Lys Phe Cys
            85                  90                  95
Pro Ile Lys Glu Leu Gly Val Val Tyr Asn Thr Asp Ser Gln Ile His
            100                 105                 110
Gln Trp Phe Gln Lys Gln Arg Asn Lys Asp Leu Glu Lys Ala Thr Glu
        115                 120                 125
Asn Pro Glu Leu Phe Gly Glu Asn Arg Ala Glu Asp Asn Asn Arg Ser
    130                 135                 140
Ala Arg Ser Gln Val Lys Glu Thr Leu Arg Asp Cys Asp Gly Asn Val
145                 150                 155                 160
Leu Lys Lys Ile Tyr Glu Arg Asn Leu Asp Val Leu Leu Phe Met Asn
            165                 170                 175
Trp Val Pro Lys Thr Met Asp Asp Val Asp Pro Val Ser Glu Asp Ser
            180                 185                 190
Ile Arg Thr Val Ile Ser Cys Tyr Lys Leu Ile Lys Ala Cys Lys Pro
        195                 200                 205
Glu Phe Arg Ser Leu Ile Ser Glu Leu Leu Arg Ala Met Gln Ser Gly
    210                 215                 220
Leu Gly Leu Leu Ser Arg Cys Ser Arg Tyr Gln Glu Arg Ala Lys Thr
225                 230                 235                 240
Val Ser His Lys Asp Ala Pro Leu Phe Cys Pro Thr His Ser Tyr Tyr
            245                 250                 255
Arg Asp Gly Tyr Leu Thr Pro Leu Arg Ala Gly Pro Arg Tyr Ile Ile
            260                 265                 270
Asn Arg Ala Ile
        275


        <210> 172
        <211> 358
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 172

```
Asn Val Arg Lys Asn His Ile Ile Arg Gly Glu Lys Tyr Asn Thr Cys
1               5                   10              15
Thr Val Ile Ala Phe Val Leu Ser Met Ser Tyr Asp Thr Leu Phe Lys
            20                  25                  30
Asn Leu Glu Lys Glu Asp Ser Val His Lys Ile Cys Asn Glu Ile Phe
        35                  40                  45
Ala Leu Val Pro Arg Leu Asn Thr Ile Ala Cys Thr Glu Ala Ile Ile
    50                  55                  60
Lys Asn Leu Pro Lys Ala Asp Ile His Val His Leu Pro Gly Thr Ile
65              70                  75                  80
Thr Pro Gln Leu Ala Trp Ile Leu Gly Val Lys Asn Gly Phe Leu Lys
            85                  90                  95
Trp Ser Tyr Asn Ser Trp Thr Asn His Arg Leu Leu Ser Pro Lys Asn
            100                 105                 110
Pro His Lys Gln Tyr Ser Asn Ile Phe Arg Asn Phe Gln Asp Ile Cys
    115                 120                 125
His Glu Lys Asp Pro Asp Leu Ser Val Leu Gln Tyr Asn Ile Leu Asn
    130                 135                 140
Tyr Asp Phe Asn Ser Phe Asp Arg Val Met Ala Thr Val Gln Gly His
145             150                 155                 160
Arg Phe Pro Pro Gly Gly Ile Gln Asn Glu Glu Asp Leu Leu Leu Ile
            165                 170                 175
Phe Asn Asn Tyr Leu Gln Gln Cys Leu Asp Asp Thr Ile Val Tyr Thr
            180                 185                 190
Glu Val Gln Gln Asn Ile Arg Leu Ala His Val Leu Tyr Pro Ser Leu
    195                 200                 205
Pro Glu Lys His Ala Arg Met Lys Phe Tyr Gln Ile Leu Tyr Arg Ala
    210                 215                 220
Ser Gln Thr Phe Ser Lys His Gly Ile Thr Leu Arg Phe Leu Asn Cys
225                 230                 235                 240
Phe Asn Lys Thr Phe Ala Pro Gln Ile Asn Thr Gln Glu Pro Ala Gln
            245                 250                 255
Glu Ala Val Gln Trp Leu Gln Glu Val Asp Ser Thr Phe Pro Gly Leu
            260                 265                 270
Phe Val Gly Ile Gln Ser Ala Gly Ser Glu Ser Ala Pro Gly Ala Cys
    275                 280                 285
Pro Lys Arg Leu Ala Ser Gly Tyr Arg Asn Ala Tyr Asp Ser Gly Phe
    290                 295                 300
Gly Cys Glu Ala His Ala Gly Glu Gly Ile Glu Thr Arg Thr Ile Phe
305                 310                 315                 320
Ser Ser Ala Lys Val Asn Pro Glu Gly Leu Ile Glu Ile Thr Arg Val
            325                 330                 335
Thr Phe Ser Ser Leu Lys Arg Lys Gln Pro Ser Ser Leu Pro Ile Arg
            340                 345                 350
Val Thr Cys Gln Leu Gly
            355
```

<210> 173
<211> 432
<212> PRT
<213> Chlamydia pneumoniae

<400> 173

```
Ile Ile Lys Leu Gln Ser Ala Arg Arg His Leu Asn Thr Ile Phe Ile
1               5                   10              15
Leu Asp Phe Gly Ser Gln Tyr Thr Tyr Val Leu Ala Lys Gln Val Arg
            20                  25                  30
Lys Leu Phe Val Tyr Cys Glu Val Leu Pro Trp Asn Ile Ser Val Gln
        35                  40                  45
```

494

```
Cys Leu Lys Glu Arg Ala Pro Leu Gly Ile Ile Leu Ser Gly Gly Pro
    50                  55                  60
His Ser Val Tyr Glu Asn Lys Ala Pro His Leu Asp Pro Glu Ile Tyr
65                  70                  75                  80
Lys Leu Gly Ile Pro Ile Leu Ala Ile Cys Tyr Gly Met Gln Leu Met
            85                  90                  95
Ala Arg Asp Phe Gly Gly Thr Val Ser Pro Gly Val Gly Glu Phe Gly
            100                 105                 110
Tyr Thr Pro Ile His Leu Tyr Pro Cys Glu Leu Phe Lys His Ile Val
        115                 120                 125
Asp Cys Glu Ser Leu Asp Thr Glu Ile Arg Met Ser His Arg Asp His
    130                 135                 140
Val Thr Thr Ile Pro Glu Gly Phe Asn Val Ile Ala Ser Thr Ser Gln
145                 150                 155                 160
Cys Ser Ile Ser Gly Ile Glu Asn Thr Lys Gln Arg Leu Tyr Gly Leu
            165                 170                 175
Gln Phe His Pro Glu Val Ser Asp Ser Thr Pro Thr Gly Asn Lys Ile
        180                 185                 190
Leu Glu Thr Phe Val Gln Glu Ile Cys Ser Ala Pro Thr Leu Trp Asn
    195                 200                 205
Pro Leu Tyr Ile Gln Gln Asp Leu Val Ser Lys Ile Gln Asp Thr Val
    210                 215                 220
Ile Glu Val Phe Asp Glu Val Ala Gln Ser Leu Asp Val Gln Trp Leu
225                 230                 235                 240
Ala Gln Gly Thr Ile Tyr Ser Asp Val Ile Glu Ser Ser Arg Ser Gly
            245                 250                 255
His Ala Ser Glu Val Ile Lys Ser His His Asn Val Gly Gly Leu Pro
            260                 265                 270
Lys Asn Leu Lys Leu Lys Leu Val Glu Pro Leu Arg Tyr Leu Phe Lys
    275                 280                 285
Asp Glu Val Arg Ile Leu Gly Glu Ala Leu Gly Leu Ser Ser Tyr Leu
    290                 295                 300
Leu Asp Arg His Pro Phe Pro Gly Pro Gly Leu Thr Ile Arg Val Ile
305                 310                 315                 320
Gly Glu Ile Leu Pro Glu Tyr Leu Ala Ile Leu Arg Arg Ala Asp Leu
            325                 330                 335
Ile Phe Ile Glu Glu Leu Arg Lys Ala Lys Leu Tyr Asp Lys Ile Ser
            340                 345                 350
Gln Ala Phe Ala Leu Phe Leu Pro Ile Lys Ser Val Ser Val Lys Gly
            355                 360                 365
Asp Cys Arg Ser Tyr Gly Tyr Thr Ile Ala Leu Arg Ala Val Glu Ser
    370                 375                 380
Thr Asp Phe Met Thr Gly Arg Trp Ala Tyr Leu Pro Cys Asp Val Leu
385                 390                 395                 400
Ser Ser Cys Ser Ser Arg Ile Ile Asn Glu Ile Pro Glu Val Ser Arg
            405                 410                 415
Val Val Tyr Asp Ile Ser Asp Lys Pro Pro Ala Thr Ile Glu Trp Glu
            420                 425                 430
```

<210> 174
<211> 266
<212> PRT
<213> Chlamydia pneumoniae

<400> 174
```
Ala Pro Ile Gly Ala Ala Ile Gly Ile Gly Pro Leu Gly Ile Ser Arg
1               5                   10                  15
Ala His His Leu Val Glu Ala Gly Ala Asn Val Leu Val Ile Asp Thr
            20                  25                  30
Ala His Ala His Ser Lys Gly Val Phe Gln Thr Val Leu Glu Ile Lys
        35                  40                  45
```

495

```
Ser Gln Phe Pro Gln Ile Ser Leu Val Val Gly Asn Leu Val Thr Ala
    50              55                  60
Glu Ala Ala Val Ser Leu Ala Glu Ile Gly Val Asp Ala Val Lys Val
65              70                  75                      80
Gly Ile Gly Pro Gly Ser Ile Cys Thr Thr Arg Ile Val Ser Gly Val
            85                  90                      95
Gly Tyr Pro Gln Ile Thr Ala Ile Thr Asn Val Ala Lys Ala Leu Lys
            100             105                 110
Asn Ser Ala Val Thr Val Ile Ala Asp Gly Arg Ile Arg Tyr Ser Gly
    115                 120                 125
Asp Val Val Lys Ala Leu Ala Ala Gly Ala Asp Cys Val Met Leu Gly
    130                 135                 140
Ser Leu Leu Ala Gly Thr Asp Glu Ala Pro Gly Asp Ile Val Ser Ile
145             150                 155                     160
Asp Glu Lys Leu Phe Lys Arg Tyr Arg Gly Met Gly Ser Leu Gly Ala
            165                 170                     175
Met Lys Gln Gly Ser Ala Asp Arg Tyr Phe Gln Thr Gln Gly Gln Lys
            180                 185                 190
Lys Leu Val Pro Gly Gly Val Glu Gly Leu Val Ala Tyr Lys Gly Ser
            195                 200                 205
Val His Asp Val Leu Tyr Gln Ile Leu Gly Gly Ile Arg Ser Gly Met
    210                 215                 220
Gly Tyr Val Gly Ala Glu Thr Leu Lys Asp Leu Lys Thr Lys Ala Ser
225             230                 235                     240
Phe Val Arg Ile Thr Glu Ser Gly Arg Ala Glu Ser His Ile His Asn
            245                 250                 255
Ile Tyr Lys Val Gln Pro Thr Leu Asn Tyr
            260                 265

    <210> 175
    <211> 109
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 175
Thr Ile Phe Asp Leu Ile Tyr Lys Ile Asp Ser Tyr Lys His Gln Gln
1               5                   10                  15
Gly Phe Met Asp Phe Ser Val Phe Pro Asp Arg Phe Val Glu Ser Thr
            20                  25                  30
Ser Pro Ser Pro Ile Glu Asp Ile Asp Ala Lys Thr Leu Val Ser Asn
            35                  40                  45
Cys Cys His Tyr Cys Ser Arg Cys Leu Phe Ile Phe Leu Ser Leu Leu
    50                  55                  60
Ser Ile Ile Ile Cys Phe Ser Val Tyr Gly Thr Ser Gly Glu Thr Ala
65                  70                  75                      80
Ser Leu Val Phe Gly Ile Leu Ser Leu Ile Val Leu Val Leu Leu Ile
            85                  90                      95
Ile Glu Cys Arg Asn Arg Glu Cys Cys Arg Arg Ile Ser
            100                 105

    <210> 176
    <211> 170
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 176
Lys Ile Phe Ile Trp Phe Val Glu Lys Ile Val Ile Leu Ser Met Ile
1               5                   10                  15
Met Thr Thr Ile Ser Asn Ser Pro Ser Pro Ala Leu Asn Pro Glu Leu
            20                  25                  30
```

496

```
Ser Leu Ile Pro Pro Pro Thr Leu Val Ser Ser Gly Thr Gln Thr Ser
        35                  40                  45
Leu Ala Tyr Thr Ile Pro Ala Gln Gly Arg Arg Ser Thr Leu Arg Ile
    50                  55                  60
Ile Leu Asp Ile Phe Ile Ile Ile Leu Gly Leu Ala Thr Ile Ile Ser
65                  70                  75                      80
Thr Phe Ile Val Ile Phe Phe Leu Asn Gly Leu Asn Leu Leu Ser Thr
                85                  90                  95
Pro Ser Ile Ile Ser Ser Ser Cys Leu Ile Ile Val Gly Leu Leu Phe
                100                 105                 110
Leu Ile Met Gly Leu Tyr Phe Met Ile Ser Ser Leu Asp Gln Gly Leu
        115                 120                 125
Val Gly Leu Leu Gln Lys Glu Leu Ser Gln Ala Glu Glu Arg Glu Glu
    130                 135                 140
Glu Tyr Ile Gln Glu Ile Glu Ala Leu Arg Gly Ala Pro Arg Ala Glu
145                 150                 155                 160
Ser Pro Thr Glu Ser Pro Ser Thr Trp Leu
                165                 170


        <210> 177
        <211> 140
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 177
Leu Leu Leu Ala Cys Phe Gln Phe Leu Leu Arg Arg Arg Asp Met Glu
1               5                   10                  15
Gln Pro Asn Cys Val Ile Gln Asp Thr Thr Thr Val Leu Tyr Ala Leu
            20                  25                  30
Asn Ser Phe Asp Pro Arg Leu Ser Asp Asp Thr His Arg Leu Gly Lys
        35                  40                  45
Gln Ser Pro Leu Glu Ala Glu Asn Ala Leu Gly Glu Phe Ile Glu Gly
    50                  55                  60
Leu Asp Thr Asn Ser Phe Pro Leu Glu Glu Val Ala Ile Pro Ile Leu
65                  70                  75                      80
Pro Gly Tyr His Pro Lys Phe Tyr Leu Ser Phe Ile Asp Arg Asp Asp
                85                  90                  95
Gln Gly Val His Tyr Glu Val Leu Asp Gly Val Phe Leu Lys Thr Val
                100                 105                 110
Ala Ala Cys Ile Ile Glu Asn Ser Phe Leu Thr Asp Ser Met Ser Pro
        115                 120                 125
Glu Leu Leu Ser Glu Val Lys Glu Ala Leu Lys Arg
    130                 135                 140


        <210> 178
        <211> 416
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 178
Asn Asp Asp Asp Pro Met Asp Glu Ser Asp Gly Glu Glu Ala Ser Lys
1               5                   10                  15
Asp Ser Ala Phe Ser Ala Ser Phe Ser Tyr Glu Phe Val Lys Ser Ser
            20                  25                  30
Thr Arg Glu Ser Lys Asn Thr Val Thr His Ser Thr Ala Ser Arg Thr
        35                  40                  45
Leu Tyr Ile Leu Arg Gln Asp Cys Ser Tyr Asp Pro Arg Ala Leu Lys
    50                  55                  60
Val Asp Asp Glu Phe Arg Tyr Trp Val Glu Lys Arg Leu Asp Ala Lys
65                  70                  75                      80
```

497

Asn Pro Asp Ser Leu Asn Ala Phe Val Lys Glu Val Gly Thr His Tyr
                85   90   95
Val Ala Ser Val Thr Tyr Gly Gly Ile Gly Phe Gln Val Leu Lys Met
                100   105   110
Ser Tyr Leu Gln Val Glu Glu Leu Glu Lys Glu Lys Ile Ser Ile Ser
                115   120   125
Val Ala Ala Ala Ser Ser Leu Leu Lys Ser Lys Thr Ser Asn Ala Thr
                130   135   140
Glu Lys Gly Tyr Ser Ser Tyr Gln Ser Glu Ser Ser Ala Gln Thr Val
145   150   155   160
Phe Leu Gly Gly Thr Val Leu Pro Asp Leu Gln Gln Asp Lys Leu Asp
                165   170   175
Phe Lys Asp Trp Ser Glu Ser Ile Pro Asn Glu Pro Ile Pro Leu Ala
                180   185   190
Ile Ser Val Ser Ser Ile Thr Asp Leu Ile Ile Pro Glu Leu Phe Pro
                195   200   205
Ser Glu Asp Ala Gln Val Leu Ser Gln Lys Lys Ser Ala Leu Gly Gln
210   215   220
Val Ile Leu Asn Tyr Leu Glu Ser His Lys Pro Lys Glu Glu Gly Pro
225   230   235   240
Lys Pro Val Gln Ile Thr Ser Gly Phe Asn Ser Ser Ser Ser Val Phe
                245   250   255
Thr Leu Gln Ala Ala Lys Ala Pro Lys Thr Val Ser Phe Pro Tyr Ile
                260   265   270
Asp Tyr Trp Ser Thr Ile Pro Tyr Leu Phe Pro Thr Leu Lys Glu Thr
                275   280   285
Ser Gly Ala Gln Pro Leu Ser Phe Tyr Leu Arg Phe Asp Asp Ile Phe
290   295   300
Glu Gln Gln Asn Leu Val His Asn Thr Ser Tyr Ile Leu Ala Ser Thr
305   310   315   320
Ser Val Arg Leu Gly Tyr Phe Gly Asp Ser Tyr Arg Asp Tyr Asp Ala
                325   330   335
Leu Ser Phe Tyr Gly Ser Trp Pro Gln Ala Tyr Phe Asp Trp Ala Gly
                340   345   350
Tyr Lys Asp Arg Cys Thr Trp Thr Leu Glu Lys Leu Asn Thr Thr Gly
                355   360   365
Asp Leu Phe Ile Arg Ser Gly Asp Glu Ile Arg Leu Lys His Asn Thr
370   375   380
Ser Gly Lys Tyr Leu Ala Thr Thr Ser Met Ser Asp Gly Tyr Gln Lys
385   390   395   400
Leu Thr Cys Thr Thr Gln Thr Ser Asp Ser Val Phe Ile Ile Thr Val
                405   410   415

        <210> 179
        <211> 302
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 179
Asp Lys Arg Glu Gln Thr Lys Ser Lys Phe Ile Phe Leu Ile Ser Glu
 1   5   10   15
Glu Ser Met Lys Gln Pro Met Ser Leu Ile Phe Ser Ser Val Cys Leu
                20   25   30
Gly Leu Gly Leu Gly Ser Leu Ser Ser Cys Asn Gln Lys Pro Ser Trp
                35   40   45
Asn Tyr His Asn Thr Ser Thr Ser Glu Glu Phe Phe Val His Gly Asn
    50   55   60
Lys Ser Val Ser Gln Leu Pro His Tyr Pro Ser Ala Phe Arg Thr Thr
65   70   75   80
Gln Ile Phe Ser Glu Glu His Asn Asp Pro Tyr Val Val Ala Lys Thr
                85   90   95

498

```
Asp Glu Glu Ser Arg Lys Ile Trp Arg Glu Ile His Lys Asn Leu Lys
        100                     105                 110
Ile Lys Gly Ser Tyr Ile Pro Ile Ser Thr Tyr Gly Ser Leu Met His
        115                     120                 125
Pro Lys Ser Ala Ala Leu Thr Leu Lys Thr Tyr Arg Pro His Pro Ile
        130                     135                 140
Trp Ile Asn Gly Tyr Glu Arg Ser Phe Asn Ile Asp Thr Gly Lys Tyr
145                     150                     155                 160
Leu Lys Asn Gly Ser Arg Arg Arg Thr Ser His Asp Gly Pro Lys Asn
        165                     170                 175
Arg Ala Val Leu Asn Leu Ile Lys Ser Ser Gly Arg Arg Cys Asn Ala
        180                     185                 190
Ile Gly Leu Glu Met Thr Glu Glu Asp Phe Val Ile Ala Arg Arg Arg
        195                     200                 205
Glu Gly Val Tyr Ser Leu Tyr Pro Val Glu Val Cys Ser Tyr Pro Gln
        210                     215                 220
Gly Asn Pro Phe Val Ile Ala Tyr Ala Trp Ile Ala Asp Glu Ser Ala
225                     230                     235                 240
Cys Ser Lys Glu Val Leu Pro Val Lys Gly Tyr Tyr Ser Leu Val Trp
        245                     250                 255
Glu Ser Val Ser Ser Ser Asp Ser Leu Asn Ala Phe Gly Asp Ser Phe
        260                     265                 270
Ala Glu Asp Tyr Leu Arg Ser Thr Phe Leu Ala Asn Gly Thr Ser Ile
        275                     280                 285
Leu Cys Val His Glu Ser Tyr Lys Lys Val Pro Pro Gln Pro
        290                     295                 300

        <210> 180
        <211> 88
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 180
Val Lys Glu Tyr Leu Asp Phe Leu Val Gln Arg Asn Val Glu Arg Asp
1                   5                   10                  15
Pro Gln Thr Lys Arg His Cys Thr Val Ser Gln Lys Phe Gly Gly Glu
        20                      25                  30
Ser Ile Asp Ala Lys Thr Thr Thr Gly Gln Leu Phe His Ile Ala Gly
        35                      40                  45
Lys Thr Glu Pro Gly His Gly Lys Leu Cys Leu Gly Glu Ser Ile Leu
        50                      55                  60
Lys Gln Leu Leu Ala Leu Gly Ile Ile Thr Gly Tyr Glu Asn Arg Glu
65                      70                      75                  80
Arg Glu Val Trp Val Tyr Leu Asp
                85

        <210> 181
        <211> 165
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 181
Pro Lys Ile Trp Asp Thr His Phe Glu Thr Arg Ile Glu Ala Thr Ser
1                   5                   10                  15
Val Pro Lys Phe Asn Arg Arg Leu Arg Lys Ser Phe His Lys Ser Gly
        20                      25                  30
Arg Ser Ser Arg Pro Ser Lys Ala Cys Val Ala Asn Phe Phe Asn Phe
        35                      40                  45
Thr Leu Gln Ala Gly Arg Ser Gly Ile Ile Pro Gly Lys Lys Ala Ile
        50                      55                  60
```

499

Leu Leu Asn Val Asn Asp Ala Lys Thr Pro Asn Tyr Ser Cys Ile Phe
65   70   75   80
Glu Ser Ile Gly Phe Phe Asn Glu Gln Asp Leu Glu Ala Gln His Asn
                85   90   95
Gln Gln Ala Ala Leu Val Arg Lys Ile Leu Lys Val Val Pro His His
            100   105   110
Phe Leu Lys Gly Leu Ile Ala Lys Leu Pro Arg Ser Leu Lys Lys Asp
            115   120   125
Arg Lys Phe Met Ser Ser Leu Ile Phe Thr Lys Leu Ser Tyr Ala Leu
            130   135   140
Asp Leu Ser Ala Pro Met His Leu Glu Gly Lys Pro Asn Leu Ser Tyr
145   150   155   160
Glu Glu Lys Leu Asp
                165

        <210> 182
        <211> 203
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 182
Thr Ser Leu His Lys Ile Leu Asp Cys Lys Tyr Lys Pro Val Phe Ile
1   5   10   15
Gln Asn Thr Val Ala Ser Glu Thr Tyr Pro Ser Gln Ile Leu His Ala
            20   25   30
Gln Arg Glu Val Arg Asp Ala Tyr Phe Asn Gln Ala Asp Cys His Pro
            35   40   45
Ala Arg Ala Asn Gln Ile Leu Glu Ala Lys Lys Ile Cys Leu Leu Asp
            50   55   60
Val Tyr His Thr Asn His Tyr Ser Val Phe Thr Phe Cys Val Asp Asn
65   70   75   80
Tyr Pro Asn Leu Arg Phe Thr Phe Val Ser Ser Lys Asn Asn Glu Met
                85   90   95
Asn Gly Leu Ser Asn Pro Leu Asp Asn Val Leu Val Glu Ala Met Val
            100   105   110
Arg Arg Thr His Ala Arg Asn Leu Leu Ala Ala Cys Lys Ile Arg Asn
            115   120   125
Ile Glu Val Pro Arg Val Val Gly Leu Asp Leu Arg Ser Gly Ile Leu
            130   135   140
Ile Ser Lys Leu Glu Leu Lys Gln Pro Gln Phe Gln Ser Leu Thr Glu
145   150   155   160
Asp Phe Val Asn His Ser Thr Asn Gln Glu Glu Ala Arg Val His Gln
                165   170   175
Lys His Val Leu Leu Ile Ser Leu Ile Leu Leu Cys Lys Gln Ala Val
                180   .   185   190
Leu Glu Ser Phe Gln Glu Lys Lys Arg Ser Ser
            195   200

        <210> 183
        <211> 133
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 183
Val His Glu Leu Phe Lys Ile Asp Gly Val Tyr Tyr Phe Phe Lys Lys
1   5   10   15
Phe Met Lys Leu Phe Tyr Asn Asn Tyr Ser Leu Asn Ser His His Glu
            20   25   30
Lys Pro Ser Ser Leu Glu Lys Ala Val Gln Ala Leu Asp Ser Tyr Phe
            35   40   45

500

```
Tyr Trp Gly Gly Asp Thr Thr Asp Val Leu Ala Arg Asp Asp Ile Ser
    50                  55                  60
Arg Glu Ile Tyr Cys Val Arg Arg Leu Tyr Ile Arg Phe Trp Ile Val
65              70                  75                      80
Ser Ile Ser Gln Ser Leu Ser Arg Ile Pro Trp Arg Leu Lys Arg Ile
            85                  90                  95
Leu Leu Arg Tyr Cys Thr Leu Arg Gly Lys Tyr Val Met Pro Ile Leu
            100                 105                 110
Ile Lys Arg Ile Ala Ile Leu Leu Gly Leu Ile Arg Phe Ser Arg Leu
            115                 120                 125
Arg Lys Ser Val Tyr
    130


        <210> 184
        <211> 457
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 184
Arg Cys Ile Met Lys Lys Val Leu Ile Ala Asn Arg Gly Glu Ile Ala
 1              5                  10                      15
Val Arg Ile Ile Arg Ala Cys His Asp Leu Gly Leu Ser Thr Val Ala
            20                  25                  30
Val Tyr Ser Leu Ala Asp Gln Glu Ala Leu His Val Leu Leu Ala Asp
            35                  40                  45
Glu Ala Ile Cys Ile Gly Glu Pro Gln Ala Ala Lys Ser Tyr Leu Lys
    50                  55                  60
Ile Ser Asn Ile Leu Ala Ala Cys Glu Ile Thr Gly Ala Asp Ala Val
65                  70                  75                      80
His Pro Gly Tyr Gly Phe Leu Ser Glu Asn Ala Asn Phe Ala Ser Ile
            85                  90                  95
Cys Glu Ser Cys Gly Leu Thr Phe Ile Gly Pro Ser Ser Glu Ser Ile
            100                 105                 110
Ala Met Met Gly Asp Lys Ile Ala Ala Lys Ser Leu Ala Lys Lys Ile
            115                 120                 125
Lys Cys Pro Val Ile Pro Gly Ser Glu Gly Ile Ile Glu Asp Glu Ser
    130                 135                 140
Glu Gly Leu Lys Ile Ala Glu Lys Ile Gly Phe Pro Ile Val Ile Lys
145                 150                 155                     160
Ala Val Ala Gly Gly Gly Gly Arg Gly Ile Arg Ile Val Lys Glu Lys
            165                 170                 175
Asp Glu Phe Tyr Arg Ala Phe Ser Ala Ala Arg Ala Glu Ala Glu Ala
            180                 185                 190
Gly Phe Asn Asn Pro Asn Val Tyr Ile Glu Lys Phe Ile Glu Asn Pro
            195                 200                 205
Arg His Leu Glu Ile Gln Val Ile Gly Asp Thr His Gly Asn Tyr Val
    210                 215                 220
His Leu Gly Glu Arg Asp Cys Thr Ile Gln Arg Arg Gln Lys Leu
225                 230                 235                     240
Ile Glu Glu Thr Pro Ser Pro Ile Leu Asn Ala Glu Ile Arg Val Lys
            245                 250                 255
Val Gly Lys Val Ala Val Asp Leu Ala Arg Ser Ala Gly Tyr Phe Ser
            260                 265                 270
Val Gly Thr Val Glu Phe Leu Leu Asp Lys Asp Lys Lys Phe Tyr Phe
            275                 280                 285
Met Glu Met Asn Thr Arg Ile Gln Val Glu His Thr Ile Thr Glu Glu
            290                 295                 300
Val Thr Gly Ile Asp Leu Val Lys Glu Gln Ile His Val Ala Met Gly
305                 310                 315                     320
Asn Lys Leu Pro Trp Lys Gln Lys Asn Ile Glu Phe Ser Gly His Ile
            325                 330                 335
```

501

```
  Ile Gln Cys Arg Ile Asn Ala Glu Asp Pro Thr Asn Asn Phe Ser Pro
              340                 345                 350
  Ser Pro Gly Arg Leu Asp Tyr Tyr Leu Pro Pro Ala Gly Pro Ser Ile
              355                 360                 365
  Arg Val Asp Gly Ala Cys Tyr Ser Gly Tyr Ala Ile Pro Pro Tyr Tyr
          370                 375                 380
  Asp Ser Met Ile Ala Lys Val Ile Ala Lys Gly Lys Asn Arg Glu Glu
  385                 390                 395                 400
  Ala Ile Ala Ile Met Lys Arg Ala Leu Lys Glu Phe His Ile Gly Gly
              405                 410                 415
  Val Gln Ser Thr Ile Pro Phe His Gln Phe Met Leu Asp Asn Pro Lys
              420                 425                 430
  Phe Leu Glu Ser Asn Tyr Asp Ile Asn Tyr Ile Asp Asn Leu Leu Ala
              435                 440                 445
  Gln Gly Asn Ser Phe Phe Lys Glu Phe
          450                 455


              <210> 185
              <211> 171
              <212> PRT
              <213> Chlamydia pneumoniae


              <400> 185
  Arg Arg Leu Gly Met Asp Leu Lys Gln Ile Glu Lys Leu Met Ile Ala
  1               5                   10                  15
  Met Gly Arg Asn Gly Met Lys Arg Phe Ala Ile Lys Arg Glu Gly Leu
              20                  25                  30
  Glu Leu Glu Leu Glu Arg Asp Thr Arg Glu Gly Asn Arg Gln Glu Pro
          35                  40                  45
  Val Phe Tyr Asp Ser Arg Leu Phe Ser Gly Phe Ser Gln Glu Arg Pro
      50                  55                  60
  Ile Pro Thr Asp Pro Lys Lys Asp Thr Ile Lys Glu Thr Thr Thr Glu
  65                  70                  75                  80
  Asn Ser Glu Thr Ser Thr Thr Thr Ser Ser Gly Asp Phe Ile Ser Ser
              85                  90                  95
  Pro Leu Val Gly Thr Phe Tyr Gly Ser Pro Ala Pro Asp Ser Pro Ser
              100                 105                 110
  Phe Val Lys Pro Gly Asp Ile Val Ser Glu Asp Thr Ile Val Cys Ile
              115                 120                 125
  Val Glu Ala Met Lys Val Met Asn Glu Val Lys Ala Gly Met Ser Gly
      130                 135                 140
  Arg Val Leu Glu Val Leu Ile Thr Asn Gly Asp Pro Val Gln Phe Gly
  145                 150                 155                 160
  Ser Lys Leu Phe Arg Ile Ala Lys Asp Ala Ser
              165                 170


              <210> 186
              <211> 198
              <212> PRT
              <213> Chlamydia pneumoniae


              <400> 186
  Gln Trp Lys Ile Lys Phe Cys Cys Cys Glu Glu Lys Ile Met Val Leu
  1               5                   10                  15
  Ser Ser Gln Leu Ser Val Gly Met Phe Ile Ser Thr Lys Asp Gly Leu
              20                  25                  30
  Tyr Lys Val Thr Ser Val Ser Lys Val Ala Gly Pro Lys Gly Glu Ser
          35                  40                  45
  Phe Ile Lys Val Ala Leu Gln Ala Ala Asp Ser Asp Val Val Ile Glu
      50                  55                  60
```

502

Arg Asn Phe Lys Ala Thr Gln Glu Val Lys Glu Ala Gln Phe Glu Thr
65   70   75   80
Arg Thr Leu Glu Tyr Leu Tyr Leu Glu Asp Glu Ser Tyr Leu Phe Leu
                85   90   95
Asp Leu Gly Asn Tyr Glu Lys Leu Phe Ile Pro Gln Glu Ile Met Lys
            100   105   110
Asp Asn Phe Leu Phe Leu Lys Ala Gly Val Thr Val Ser Ala Met Val
            115   120   125
Tyr Asp Asn Val Val Phe Ser Val Glu Leu Pro His Phe Leu Glu Leu
        130   135   140
Met Val Ser Lys Thr Asp Phe Pro Gly Asp Ser Leu Ser Leu Ser Gly
145   150   155   160
Gly Val Lys Lys Ala Leu Leu Glu Thr Gly Ile Glu Val Met Val Pro
            165   170   175
Pro Phe Val Glu Ile Gly Asp Val Ile Lys Ile Asp Thr Arg Thr Cys
            180   185   190
Glu Tyr Ile Gln Arg Val
        195

        <210> 187
        <211> 231
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 187
Ala Glu Val Lys Lys Gln Glu Ser Val Leu Val Gly Pro Ser Ile Met
1   5   10   15
Gly Ala Asp Leu Thr Cys Leu Gly Val Glu Ala Lys Lys Leu Glu Gln
            20   25   30
Ala Gly Ser Asp Phe Ile His Ile Asp Ile Met Asp Gly His Phe Val
        35   40   45
Pro Asn Leu Thr Phe Gly Pro Gly Ile Ile Ala Ala Ile Asn Arg Ser
    50   55   60
Thr Asp Leu Phe Leu Glu Val His Ala Met Ile Tyr Asn Pro Phe Glu
65   70   75   80
Phe Ile Glu Ser Phe Val Arg Ser Gly Ala Asp Arg Ile Ile Val His
                85   90   95
Phe Glu Ala Ser Glu Asp Ile Lys Glu Leu Leu Ser Tyr Ile Lys Lys
            100   105   110
Cys Gly Val Gln Ala Gly Leu Ala Phe Ser Pro Asp Thr Ser Ile Glu
            115   120   125
Phe Leu Pro Ser Phe Leu Pro Phe Cys Asp Val Val Val Leu Met Ser
        130   135   140
Val Tyr Pro Gly Phe Thr Gly Gln Ser Phe Leu Pro Asn Thr Ile Glu
145   150   155   160
Lys Ile Ala Phe Ala Arg His Ala Ile Lys Thr Leu Gly Leu Lys Asp
            165   170   175
Ser Cys Leu Ile Glu Val Asp Gly Gly Ile Asp Gln Gln Ser Ala Pro
            180   185   190
Leu Cys Arg Asp Ala Gly Ala Asp Ile Leu Val Thr Ala Ser Tyr Leu
            195   200   205
Phe Glu Ala Asp Ser Leu Ala Met Glu Asp Lys Ile Leu Leu Leu Arg
    210   215   220
Gly Glu Asn Tyr Gly Val Lys
225   230

        <210> 188
        <211> 397
        <212> PRT
        <213> Chlamydia pneumoniae

503

<400> 188

```
Pro Ile Lys Asp Lys Ile Leu Met Ser Ser Pro Val Asn Asn Thr Pro
1               5                   10                  15
Ser Ala Pro Asn Ile Pro Ile Pro Ala Pro Thr Thr Pro Gly Ile Pro
            20                  25                  30
Thr Thr Lys Pro Arg Ser Ser Phe Ile Glu Lys Val Ile Ile Val Ala
        35                  40                  45
Lys Tyr Ile Leu Phe Ala Ile Ala Ala Thr Ser Gly Ala Leu Gly Thr
    50                  55                  60
Ile Leu Gly Leu Ser Gly Ala Leu Thr Pro Gly Ile Gly Ile Ala Leu
65                  70                  75                  80
Leu Val Ile Phe Phe Val Ser Met Val Leu Leu Gly Leu Ile Leu Lys
                85                  90                  95
Asp Ser Ile Ser Gly Gly Glu Glu Arg Arg Leu Arg Glu Glu Val Ser
            100                 105                 110
Arg Phe Thr Ser Glu Asn Gln Arg Leu Thr Val Ile Thr Thr Thr Leu
        115                 120                 125
Glu Thr Glu Val Lys Asp Leu Lys Ala Ala Lys Asp Gln Leu Thr Leu
    130                 135                 140
Glu Ile Glu Ala Phe Arg Asn Glu Asn Gly Asn Leu Lys Thr Thr Ala
145                 150                 155                 160
Glu Asp Leu Glu Glu Gln Val Ser Lys Leu Ser Glu Gln Leu Glu Ala
            165                 170                 175
Leu Glu Arg Ile Asn Gln Leu Ile Gln Ala Asn Ala Gly Asp Ala Gln
            180                 185                 190
Glu Ile Ser Ser Glu Leu Lys Lys Leu Ile Ser Gly Trp Asp Ser Lys
    195                 200                 205
Val Val Glu Gln Ile Asn Thr Ser Ile Gln Ala Leu Lys Val Leu Leu
    210                 215                 220
Gly Gln Glu Trp Val Gln Glu Ala Gln Thr His Val Lys Ala Met Gln
225                 230                 235                 240
Glu Gln Ile Gln Ala Leu Gln Ala Glu Ile Leu Gly Met His Asn Gln
            245                 250                 255
Ser Thr Ala Leu Gln Lys Ser Val Glu Asn Leu Leu Val Gln Asp Gln
            260                 265                 270
Ala Leu Thr Arg Val Val Gly Glu Leu Leu Glu Ser Glu Asn Lys Leu
            275                 280                 285
Ser Gln Ala Cys Ser Ala Leu Arg Gln Glu Ile Glu Lys Leu Ala Gln
    290                 295                 300
His Glu Thr Ser Leu Gln Gln Arg Ile Asp Ala Met Leu Ala Gln Glu
305                 310                 315                 320
Gln Asn Leu Ala Glu Gln Val Thr Ala Leu Glu Lys Met Lys Gln Glu
            325                 330                 335
Ala Gln Lys Ala Glu Ser Glu Phe Ile Ala Cys Val Arg Asp Arg Thr
            340                 345                 350
Phe Gly Arg Arg Glu Thr Pro Pro Pro Thr Thr Pro Val Val Glu Gly
    355                 360                 365
Asp Glu Ser Gln Glu Glu Asp Glu Gly Gly Thr Pro Pro Val Ser Gln
    370                 375                 380
Pro Ser Ser Pro Val Asp Arg Ala Thr Gly Asp Gly Gln
385                 390                 395
```

<210> 189
<211> 276
<212> PRT
<213> Chlamydia pneumoniae

<400> 189

```
Val Phe Leu Thr Tyr Thr Arg Thr Leu Pro Met His Ser Lys Phe Leu
1               5                   10                  15
```

```
Ser Arg Arg Lys Lys Asn Ser Ser His Lys Glu Glu Thr Ser Trp Asp
        20              25              30
Cys Ile Ala Ser Ser Tyr Asn Lys Ile Val Gln Asp Lys Gly His Tyr
        35              40              45
Tyr His Arg Glu Thr Ile Leu Pro Gln Leu Leu Pro Ser Leu Thr Leu
    50              55              60
Gly Ser Lys Ser Ser Val Leu Asp Ile Gly Cys Gly Gln Gly Phe Leu
65              70              75                      80
Glu Arg Ala Leu Pro Lys Glu Cys Arg Tyr Leu Gly Ile Asp Ile Ser
            85              90                      95
Ser Arg Leu Ile Ala Leu Ala Lys Lys Met Arg Ser Val Asn Ser His
            100             105             110
Gln Phe Lys Val Ala Asp Leu Ser Lys Arg Leu Glu Phe Val Glu Pro
        115             120             125
Thr Leu Phe Ser His Ala Val Ala Ile Leu Ser Leu Gln Asn Met Glu
    130             135             140
Phe Pro Gly Glu Ala Ile Arg Asn Thr Ala Thr Leu Leu Glu Pro Leu
145             150             155                     160
Gly Gln Phe Phe Ile Val Leu Asn His Pro Cys Phe Arg Ile Pro Arg
            165             170             175
Ala Ser Ser Trp His Tyr Asp Glu Asn Lys Lys Ala Ile Ser Arg His
            180             185             190
Ile Asp Arg Tyr Leu Ser Pro Met Lys Ile Pro Ile Met Ala His Pro
        195             200             205
Gly Gln Lys Asp Ser Pro Ser Thr Leu Ser Phe His Phe Pro Leu Ser
210             215             220
Tyr Trp Phe Lys Glu Leu Ser Ser His Gly Phe Leu Val Ser Gly Leu
225             230             235                     240
Glu Glu Trp Thr Ser Ser Lys Thr Ser Thr Gly Lys Arg Ala Lys Ala
            245             250             255
Glu Asn Leu Cys Arg Lys Glu Phe Pro Leu Phe Leu Met Ile Ser Cys
            260             265             270
Ile Lys Ile Lys
            275


        <210> 190
        <211> 437
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 190
Lys Thr Leu Asn Ser Cys Ile Met Phe Arg Lys Leu Phe Pro Phe Ser
1               5               10              15
Lys Lys Lys Thr Gly Gln Lys Gln Arg Leu Arg Asn Asn Gly Leu Leu
        20              25              30
Gln Ala Ile Ile Gln Ser Ile Lys Val Leu Leu His Asn Glu Ala Ser
        35              40              45
Lys Glu Ala Cys Val Leu Ser Tyr Tyr Gly Leu Leu Thr Cys Val Pro
    50              55              60
Ile Leu Val Phe Phe Leu Arg Leu Ser Gln His Leu Phe Thr Asn Leu
65              70              75                      80
Asn Trp Lys Glu Trp Leu Ile Ile Lys Phe Pro Asp Tyr Lys Lys Pro
            85              90                      95
Ile Val Ala Ile Val Glu Ala Ala Tyr His Ala Thr Glu Ser Asn Ile
            100             105             110
Gly Leu Val Leu Val Gly Ser Phe Phe Val Phe Cys Trp Ala Gly Ile
        115             120             125
Leu Met Leu Leu Ser Leu Glu Asp Gly Leu Asn Lys Ile Phe Arg Thr
    130             135             140
Ser Trp Thr Pro Ile Ser Leu Lys Arg Leu Val Ser Tyr Phe Val Ile
145             150             155                     160
```

```
Thr Leu Val Ser Pro Met Ile Phe Ile Ile Val Cys Gly Ser Trp Ile
              165                 170                 175
Tyr Ile Thr Gln Ile Met Pro Ile Gln Tyr Ala Lys Leu Phe Ser Leu
              180                 185                 190
Ser His Ser Met Thr Ala Leu Tyr Phe Ile Ser Arg Phe Val Pro Tyr
              195                 200                 205
Leu Leu Leu Tyr Leu Ala Leu Phe Cys Cys Tyr Ala Phe Leu Pro Arg
      210                 215                 220
Val Ala Ile Gln Lys Thr Ser Ala Leu Ile Ser Thr Leu Ile Ile Gly
225                 230                 235                 240
Ser Val Trp Ile Val Phe Gln Lys Ala Phe Phe Ser Leu Gln Val Ser
              245                 250                 255
Ile Phe Asn Tyr Ser Phe Thr Tyr Gly Ala Leu Val Ala Leu Pro Ser
              260                 265                 270
Phe Leu Leu Leu Leu Tyr Ile Tyr Thr Met Ile Tyr Leu Phe Gly Gly
      275                 280                 285
Ala Leu Thr Phe Ile Ile Gln Asn Arg Gly Cys Thr Phe Ile Phe Leu
      290                 295                 300
Gly Asp Lys Ile Leu Pro Ser Cys Tyr Leu Gln Leu Ile Thr Ser Thr
305                 310                 315                 320
Tyr Ile Leu Ala Leu Thr Thr Arg Gln Phe Asn Glu Gly Leu Ser Pro
              325                 330                 335
Leu Thr Ala Gln Phe Ile Ala Lys Gln Ser Lys Val Pro Ile Gly Glu
              340                 345                 350
Val Ser Gln Cys Leu Asp Val Leu Glu Lys Glu Gly Phe Leu Phe Pro
      355                 360                 365
Tyr Asn Asn Gly Tyr Gln Pro Val Phe Asn Phe Ser Glu Leu Thr Ile
      370                 375                 380
Lys Asp Ile Ala Asp Lys Leu Leu His Arg Glu Ile Phe Lys Lys Phe
385                 390                 395                 400
Asn Pro Asp Leu Gly Ile Thr Phe Ile Glu Asn Ser Phe Gln Asn Ile
              405                 410                 415
Phe Asn Gln Ala Ser Lys Asn Lys Glu Asn Leu Thr Leu Ser Glu Ile
              420                 425                 430
Ala Arg Arg Ile Lys
      435


        <210> 191
        <211> 1145
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 191
Ala Asn Gln Met Lys Arg Arg Ser Trp Leu Lys Ile Leu Gly Ile Cys
1                 5                 10                  15
Leu Gly Ser Ser Ile Val Leu Gly Phe Leu Ile Phe Leu Pro Gln Leu
              20                  25                  30
Leu Ser Thr Glu Ser Arg Lys Tyr Leu Val Phe Ser Leu Ile His Lys
              35                  40                  45
Glu Ser Gly Leu Ser Cys Ser Ala Glu Glu Leu Lys Ile Ser Trp Phe
        50                  55                  60
Gly Arg Gln Thr Ala Arg Lys Ile Lys Leu Thr Gly Glu Ala Lys Asp
65                  70                  75                  80
Glu Val Phe Ser Ala Glu Lys Phe Glu Leu Asp Gly Ser Leu Leu Arg
              85                  90                  95
Leu Leu Ile Tyr Lys Lys Pro Lys Gly Ile Thr Leu Ser Gly Trp Ser
              100                 105                 110
Leu Lys Ile Asn Glu Pro Ala Ser Ile Asp His Pro Ser Val Ser His
              115                 120                 125
Leu Asp Pro Gly Ser Leu Leu Thr Tyr Leu Asn Asp Cys Lys Ile Ile
      130                 135                 140
```

506

```
Ser Glu His Gly Phe Ile Thr Met Lys Thr Val Ser Gly Ser Ser Leu
145                 150                 155                 160
Ser Val Ser Gly Phe Tyr Leu Glu Lys Ser Ser Glu Lys Phe Met Thr
              165                 170                 175
Lys Cys Val Val Ser Glu Asp Gln Gln Ser Gly Asn Ile Phe Ile Glu
          180                 185                 190
Ser Val Leu Ser Pro Asp Val Ser Ile Ser Ala Gln Phe Ser Ser Val
          195                 200                 205
Pro Val Ala Phe Phe Lys Ile Phe Ile Ala Ser Pro Phe Trp Asp His
      210                 215                 220
Leu Leu Ser Tyr Glu Asp Ile Ile Asn Leu Ser Ala Glu Ala Thr His
225                 230                 235                 240
Thr Asn Asp Gly Lys Ile Ser Met Thr Ala Ser Gly Glu Gly Asn Gln
              245                 250                 255
Ile Gln Met Lys Leu Gln Gly His Ile His Lys Ser Thr Phe Tyr Ile
              260                 265                 270
Val Glu Gly Ser Ser Ser Phe Ile Glu Leu Lys Pro Glu Leu Ala Ser
          275                 280                 285
Ala Leu Cys Asn Gln Ile Ile Pro Leu Ser Thr Pro Ile Thr Ser Lys
      290                 295                 300
Gln Ile His Ala Thr Val Ser Tyr Ala Lys Ile Pro Leu Asp Ile Thr
305                 310                 315                 320
Lys Trp Lys His Ile Glu Ile Thr Ser Gln Ala Gln Leu Pro Glu Val
              325                 330                 335
Ala Ile His Pro Lys Asp Pro Asn Leu Ala Leu Gln Leu Arg Asp Thr
              340                 345                 350
Lys Leu Gly Ile Lys Lys Thr Glu Lys Phe Ser Asp Ile Arg Tyr Ser
          355                 360                 365
Ser Ser Thr Val Leu Gly Gly Ala Ser Pro Ser His Leu Asn Gly Leu
      370                 375                 380
Ile Ser Ile Asp Asn Lys Lys His Leu Thr Lys Phe Arg Leu Gln Gln
385                 390                 395                 400
Ala Gln Leu Pro His Thr Tyr Leu Arg Ala Ile Phe Pro Gln Pro Phe
              405                 410                 415
Val Ile Asn Val Pro Leu Asp Val Ala Tyr Tyr Ser Leu Asn Ile Glu
          420                 425                 430
Gly Thr Tyr Lys Asn Ala His Leu Glu Ala Asp Ala Ile Leu Asp Asn
          435                 440                 445
Pro Leu Leu Lys Leu Ser Cys Ser Met Ser Gly Thr Trp Lys Asn Phe
      450                 455                 460
Leu Phe Lys Gly Gln Gly Thr Tyr His Phe Asn Lys Lys Trp Gln Glu
465                 470                 475                 480
Ile Leu Ser Pro His Phe Ser Tyr Ala Glu Ala Arg Phe Ser Gly Lys
              485                 490                 495
Ala Gln Ile Thr Asp Thr Asn Leu Phe Phe Pro Lys Phe Ser Gly Lys
          500                 505                 510
Ile Thr Ala Arg Glu Asn Glu Leu Leu Ile His Ala Lys Phe Gly Ser
          515                 520                 525
Pro Asn Glu Pro Ile Lys Pro Glu Thr Thr Ser Ile Leu Ile His Gly
      530                 535                 540
Gln Phe Cys Ser Leu Pro Leu Ser Leu Val Ser Asn His Leu Ala Pro
545                 550                 555                 560
Phe His Leu Lys Lys Leu Thr Phe Ser Phe His Thr Asp Gly Gly Lys
              565                 570                 575
Phe Val Thr Lys Gly Asn Leu Gln Ala Leu Ile Glu Asn Pro Asp Tyr
          580                 585                 590
Pro Asp Leu Asn Asn Thr Arg Ile Leu Ile Pro Asp Leu Leu Leu Ser
          595                 600                 605
Leu Asp Glu Ser Ser Thr Ser Pro Ser Ser Lys Asp Leu Lys Ile Gln
610                 615                 620
```

507

Gly Ser Gly Glu Ile Phe Ser Leu Pro Leu Asp Ser Ile Thr Lys Thr
625   630   635   640
Tyr Gly Lys Gln Val Arg Leu Ser Pro Tyr Phe Gly Ser Ser Gly Asp
              645   650   655
Leu Asn Phe Val Val Asn Tyr Asn Pro Lys Asp Gln Asn Lys Leu Thr
          660   665   670
Leu Leu Ser Asn Phe Lys Ser Glu Ala Leu Leu Gly Glu Leu Lys Leu
          675   680   685
Val Met Asp Phe Ser Met Lys Leu Ser Ser Gly Thr Gln Gly Thr Leu
          690   695   700
Gln Trp Glu Val Ser Pro Glu Arg Tyr Ala Ser Phe Phe Lys Asn Ala
705   710   715   720
Ser Cys Ser Pro Thr Cys Leu Leu His Arg Thr Ala Asn Val Arg Leu
              725   730   735
Asp Ile Ser Lys Leu Ser Cys Pro Glu Glu Thr Lys Gly Leu Ser Cys
          740   745   750
Leu Thr Leu Leu Ala Ala Gly Gly Leu Glu Gly Ser Leu Glu Ala Thr
          755   760   765
Pro Leu Ile Phe Tyr Asp Asn Val Ser Lys Glu Thr Phe Ile Ile Asn
770   775   780
Asp Phe Lys Gly Ser Leu Arg Ala Asn Asn Leu Asp Ala Lys Ile Glu
785   790   795   800
Tyr Asp Leu Lys Gly Ser Cys Leu Ala Pro Arg Gln Asp Ser Lys Thr
              805   810   815
Leu Ala Glu Phe Ser Leu Glu Gly Gln Val Asp His Leu Phe Ser Pro
          820   825   830
Glu Ser Arg Glu Phe Lys Gln Thr Ala Asn Trp Ile His Ile Pro Ser
          835   840   845
Ser Phe Ile Ala Gly Ile Ile Pro Met Ser Pro Gly Leu Lys Ala Gln
      850   855   860
Ile Ser Ser Leu Ala Gly Pro Arg Ile Asn Val Ser Ile Lys Asn Ala
865   870   875   880
Phe Arg Phe Gly Glu Gly Pro Val Asp Ile Met Val Asp Ser Glu Asn
              885   890   895
Leu Gln Ala Gln Ile Pro Leu Ile Leu Asn Glu Lys Ser Ile Leu Leu
          900   905   910
Arg Glu Asn Leu Thr Ala His Leu Ser Ile Asn Glu Asp Val Asn Lys
          915   920   925
Ala Phe Leu Gln Glu Phe Asn Pro Leu Leu Ala Gly Gly Ala Tyr Ser
      930   935   940
Gln Tyr Pro Val Thr Leu Glu Ile Asp Lys Gln Asn Phe Tyr Leu Pro
945   950   955   960
Ile Arg Pro Tyr Ser Phe Glu Glu Phe Arg Ile Gln Ser Ala Thr Leu
              965   970   975
Asp Met Gly Lys Ile Ser Ile Ala Asn Thr Gly Thr Met Tyr Ala Leu
          980   985   990
Phe Gln Phe Leu Asp Ile Thr Asp Gln Lys Gln Phe Val Glu Ser Trp
          995   1000   1005
Phe Thr Pro Ile Phe Phe Ser Val Gln Lys Gly Ser Ile Ile Cys Lys
      1010   1015   1020
Arg Leu Asp Ala Leu Ile Asp Arg Arg Ile Arg Leu Ala Leu Trp Gly
1025   1030   1035   1040
Lys Thr Asp Ile Ala His Asp Arg Leu Phe Met Thr Leu Gly Ile Asp
              1045   1050   1055
Pro Glu Val Ile Lys Lys Tyr Phe His Asn Thr Ser Leu Lys Thr Lys
          1060   1065   1070
Asn Phe Phe Leu Ile Lys Ile Arg Gly Ser Ile Ser Ser Pro Glu Val
      1075   1080   1085
Asp Trp Ser Ser Ala Tyr Ala Arg Ile Ala Leu Leu Lys Ser Tyr Ser
      1090   1095   1100

```
Leu Gly Asn Pro Phe Ser Ser Leu Ala Asp Lys Leu Phe Ser Ser Leu
1105                1110                1115                1120
Gly Asp Ser Thr Pro Pro Pro Thr Val His Pro Phe Pro Trp Glu Lys
                1125                1130                1135
Ser Asn Phe Asp Ser Ile Glu Asn Lys
                1140                1145


        <210> 192
        <211> 458
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 192
Leu Leu Gly Ile Lys Leu Met Arg Lys Arg His Ser Phe Asp Ser Thr
1                   5                   10                  15
Ser Thr Lys Lys Glu Ala Val Ser Lys Ala Ile Gln Lys Ile Ile Lys
                20                  25                  30
Ile Met Glu Thr Thr Asp Pro Ser Leu Asn Val Glu Thr Pro Asn Ala
            35                  40                  45
Glu Ile Glu Ser Ile Leu Gln Glu Ile Lys Glu Ile Lys Gln Lys Leu
        50                  55                  60
Ser Lys Gln Ala Glu Asp Leu Gly Leu Leu Glu Lys Tyr Cys Ser Gln
65                  70                  75                  80
Glu Thr Leu Ser Asn Leu Glu Asn Thr Asn Ala Ser Leu Lys Leu Ser
                85                  90                  95
Ile Gly Ser Val Ile Glu Glu Leu Ala Ser Leu Lys Gln Leu Val Glu
            100                 105                 110
Glu Ser Ile Glu Glu Ser Leu Gly Gln Gln Asp Gln Leu Ile Gln Ser
        115                 120                 125
Val Leu Ile Glu Ile Ser Asp Lys Phe Leu Ser Ser Ile Gly Glu Thr
        130                 135                 140
Leu Ser Gly Asn Leu Asp Met Asn Gln Asn Val Ile Gln Gly Leu Leu
145                 150                 155                 160
Ile Lys Glu Asn Pro Glu Lys Ser Glu Ala Ala Ser Val Gly Tyr Val
                165                 170                 175
Gln Thr Leu Leu Glu Pro Leu Ser Lys Arg Ile Gly Glu Thr His Lys
            180                 185                 190
Lys Val Ala Thr His Asp Val Asn Ile Ser Ser Leu Gln Phe His Met
            195                 200                 205
Met Ser Val Ala Gly Gly Arg Phe Arg Gly His Ile Asp Met Asn Gly
    210                 215                 220
Tyr Arg Val Leu Gly Leu Gly Glu Pro Lys Asn Gly Glu Asp Ala Val
225                 230                 235                 240
Ser Lys Asp Tyr Leu Glu Arg Tyr Val Ser Ser Gln Leu Thr Ile Asp
                245                 250                 255
Lys Val Glu Asp Lys Pro Ile Thr Lys Pro Asn Lys Gly Lys Leu Leu
            260                 265                 270
Tyr Ser Gln Gly Thr Ser Pro Lys Leu Glu Ser Pro Leu Pro Leu Gly
        275                 280                 285
Leu Leu Thr Ser Gly Ile Ser Gly Phe Thr Trp Lys Ser Ala Ser Lys
    290                 295                 300
Ser Asn Asp Gly Ser Phe Pro Phe Ser Ala Leu Arg His Lys Glu Thr
305                 310                 315                 320
Glu Ser Asp Thr Asp Cys Phe Gln Ile Thr Ser Thr Thr Leu Ser Gly
                325                 330                 335
Asn Gln Ala Gly Thr Tyr Thr Trp Ser Leu Ser Leu Lys Val Leu Val
            340                 345                 350
Pro Ser Ile Phe Gln Ile Glu Lys Pro Glu Val Gln Leu Ser Leu Val
        355                 360                 365
Tyr Ser Tyr Glu Asp Trp Leu Pro Ile Asp Asn Ile Phe Asn Met Ser
    370                 375                 380
```

509

```
Gln Pro Arg Thr Ile Pro Leu Ala Leu Leu Gly Gln Thr Met Leu Ala
385             390             395             400
Gly Gln Lys Tyr Asp Ile Leu Glu Leu Ala Ala His Gln Thr Asn Gln
            405             410             415
Thr Leu Met Ile Ser Pro Asn Cys Ser Arg Phe Ser Leu Gln Leu Lys
            420             425             430
Gln Thr Asn Gln Phe Glu Asn Ser Pro Val Asp Phe Tyr Ile Val His
            435             440             445
Ala Ala His Ser Cys His Trp Ser Gly Phe
            450             455
```

        <210> 193
        <211> 242
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 193

```
Gln His His Phe Pro Val Phe Leu Gly Tyr Gln Lys Arg Glu Gly Val
1               5               10              15
Met Thr Ile Arg Val Arg Asn Leu Ala Tyr Ser Val Asn Lys Lys Lys
            20              25              30
Ile Leu Asp Gly Val Thr Phe Ser Leu Glu Arg Gly His Ile Thr Leu
            35              40              45
Phe Val Gly Lys Ser Gly Ser Gly Lys Thr Met Ile Leu Arg Ala Leu
            50              55              60
Ala Gly Leu Val Gln Pro Thr Gln Gly Asp Ile Trp Ile Glu Gly Glu
65              70              75              80
Ala Pro Ala Leu Val Phe Gln Gln Pro Glu Leu Phe Ser His Met Thr
            85              90              95
Val Leu Gly Asn Cys Thr His Pro Gln Ile His Ile Lys Gly Arg Ser
            100             105             110
Thr Glu Glu Ala Arg Glu Lys Ala Phe Glu Leu Leu His Leu Leu Asp
            115             120             125
Ile Glu Glu Val Ala Lys Asn Tyr Pro Asp Gln Leu Ser Gly Gly Gln
            130             135             140
Lys Gln Arg Val Ala Ile Val Arg Ser Leu Cys Met Asp Lys His Thr
145             150             155             160
Leu Leu Phe Asp Glu Pro Thr Ser Ala Leu Asp Pro Phe Ala Thr Ala
            165             170             175
Ser Phe Arg His Leu Leu Glu Thr Leu Arg Asp Gln Glu Leu Thr Val
            180             185             190
Gly Leu Thr Thr His Asp Met Gln Phe Val His Ser Cys Leu Asp Arg
            195             200             205
Ile Tyr Leu Ile Asp Gln Gly Thr Val Ala Gly Val Tyr Asp Lys Arg
            210             215             220
Asp Gly Glu Leu Asp Ser Gly His Pro Leu Ser Lys Tyr Ile His Ser
225             230             235             240
Ala Gln
```

        <210> 194
        <211> 220
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 194

```
Glu Val Gly Val Asp His Trp Leu Ala Ile Ala Arg Leu Leu Leu Arg
1               5               10              15
Gly Cys Gly Tyr Thr Leu Cys Val Ser Gly Ile Gly Ile Leu Cys Gly
            20              25              30
```

```
Ser Ile Leu Gly Leu Leu Ile Gly Thr Val Thr Ser Leu Tyr Phe Pro
        35              40              45
Ser Lys Leu Thr Lys Leu Leu Ala Asn Ser Tyr Val Thr Val Ile Arg
    50              55              60
Gly Thr Pro Leu Phe Ile Gln Ile Leu Ile Ile Tyr Phe Gly Leu Pro
65              70              75              80
Glu Val Leu Pro Ile Glu Pro Thr Pro Leu Val Ala Gly Ile Ile Ala
            85              90              95
Leu Ser Met Asn Ser Ala Ala Tyr Leu Ala Glu Asn Ile Arg Gly Gly
        100             105             110
Ile Asn Ser Leu Ser Ile Gly Gln Trp Glu Ser Ala Met Val Leu Gly
        115             120             125
Tyr Lys Lys Tyr Gln Ile Phe Val Tyr Ile Ile Tyr Pro Gln Val Phe
    130             135             140
Lys Asn Ile Leu Pro Ser Leu Thr Asn Glu Phe Val Ser Leu Ile Lys
145             150             155             160
Glu Ser Ser Ile Leu Met Val Val Gly Val Pro Glu Leu Thr Lys Val
            165             170             175
Thr Lys Asp Ile Val Ser Arg Glu Leu Asn Pro Met Glu Met Tyr Leu
            180             185             190
Ile Cys Ala Gly Leu Tyr Phe Leu Met Thr Thr Ser Phe Ser Cys Ile
        195             200             205
Ser Arg Leu Ser Glu Lys Arg Arg Ser Tyr Asp Asn
    210             215             220

        <210> 195
        <211> 153
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 195
Lys Leu His Gly Val Phe Met Lys Lys Lys Val Thr Ile Asp Glu Ala
1               5               10              15
Leu Lys Glu Ile Leu Arg Leu Glu Gly Ala Ala Thr Gln Glu Glu Leu
        20              25              30
Cys Ala Lys Leu Leu Ala Gln Gly Phe Ala Thr Thr Gln Ser Ser Val
        35              40              45
Ser Arg Trp Leu Arg Lys Ile Gln Ala Val Lys Val Ala Gly Glu Arg
    50              55              60
Gly Ala Arg Tyr Ser Leu Pro Ser Ser Thr Glu Lys Thr Thr Thr Arg
65              70              75              80
His Leu Val Leu Ser Ile Arg His Asn Ala Ser Leu Ile Val Ile Arg
            85              90              95
Thr Val Pro Gly Ser Ala Ser Trp Ile Ala Ala Leu Leu Asp Gln Gly
        100             105             110
Leu Lys Asp Glu Ile Leu Gly Thr Leu Ala Gly Asp Asp Thr Ile Phe
        115             120             125
Val Thr Pro Ile Asp Glu Gly Arg Leu Pro Leu Leu Met Val Ser Ile
    130             135             140
Ala Asn Leu Leu Gln Val Phe Leu Asp
145             150

        <210> 196
        <211> 360
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 196
Glu Val Pro His Thr Ile Lys Gly Asn Val Phe Phe Ser Trp Phe Phe
1               5               10              15
```

```
Met Leu Thr Leu Gly Leu Glu Ser Ser Cys Asp Glu Thr Ala Cys Ala
         20              25              30
Ile Val Asn Glu Asp Lys Gln Ile Leu Ala Asn Ile Ile Ala Ser Gln
         35              40              45
Asp Ile His Ala Ser Tyr Gly Gly Val Val Pro Glu Leu Ala Ser Arg
         50              55              60
Ala His Leu His Ile Phe Pro Gln Val Ile Asn Lys Ala Leu Gln Gln
65               70              75              80
Ala Asn Leu Leu Ile Glu Asp Met Asp Leu Ile Ala Val Thr Gln Thr
                 85              90              95
Pro Gly Leu Ile Gly Ser Leu Ser Val Gly Val His Phe Gly Lys Gly
             100             105             110
Ile Ala Ile Gly Ala Lys Lys Ser Leu Ile Gly Val Asn His Val Glu
         115             120             125
Ala His Leu Tyr Ala Ala Tyr Met Ala Ala Gln Asn Val Gln Phe Pro
         130             135             140
Ala Leu Gly Leu Val Val Ser Gly Ala His Thr Ala Ala Phe Phe Ile
145             150             155             160
Glu Asn Pro Thr Ser Tyr Lys Leu Ile Gly Lys Thr Arg Asp Asp Ala
                 165             170             175
Ile Gly Glu Thr Phe Asp Lys Val Gly Arg Phe Leu Gly Leu Pro Tyr
                 180             185             190
Pro Ala Gly Pro Leu Ile Glu Lys Leu Ala Leu Glu Gly Ser Glu Asp
             195             200             205
Ser Tyr Pro Phe Ser Pro Ala Lys Val Pro Asn Tyr Asp Phe Ser Phe
    210             215             220
Ser Gly Leu Lys Thr Ala Val Leu Tyr Ala Ile Lys Gly Asn Asn Ser
225             230             235             240
Ser Pro Arg Ser Pro Ala Pro Glu Ile Ser Leu Glu Lys Gln Arg Asp
             245             250             255
Ile Ala Ala Ser Phe Gln Lys Ala Ala Cys Thr Thr Ile Ala Gln Lys
             260             265             270
Leu Pro Thr Ile Ile Lys Glu Phe Ser Cys Arg Ser Ile Leu Ile Gly
         275             280             285
Gly Gly Val Ala Ile Asn Glu Tyr Phe Arg Ser Ala Ile Gln Thr Ala
         290             295             300
Cys Asn Leu Pro Val Tyr Phe Pro Pro Ala Lys Leu Cys Ser Asp Asn
305             310             315             320
Ala Ala Met Ile Ala Gly Leu Gly Gly Glu Asn Phe Gln Lys Asn Ser
             325             330             335
Ser Ile Pro Glu Ile Arg Ile Cys Ala Arg Tyr Gln Trp Glu Ser Val
             340             345             350
Ser Pro Phe Ser Leu Ala Ser Pro
         355             360


        <210> 197
        <211> 538
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 197
Tyr Ser Gly Asn Ser Tyr Met Arg Lys Ile Ser Val Gly Ile Cys Ile
 1               5              10              15
Thr Ile Leu Leu Ser Leu Ser Val Val Leu Gln Gly Cys Lys Glu Ser
         20              25              30
Ser His Ser Ser Thr Ser Arg Gly Glu Leu Ala Ile Asn Ile Arg Asp
         35              40              45
Glu Pro Arg Ser Leu Asp Pro Arg Gln Val Arg Leu Leu Ser Glu Ile
    50              55              60
Ser Leu Val Lys His Ile Tyr Glu Gly Leu Val Gln Glu Asn Asn Leu
65               70              75              80
```

```
Ser Gly Asn Ile Glu Pro Ala Leu Ala Glu Asp Tyr Ser Leu Ser Ser
                85                  90                  95
Asp Gly Leu Thr Tyr Thr Phe Lys Leu Lys Ser Ala Phe Trp Ser Asn
            100             105             110
Gly Asp Pro Leu Thr Ala Glu Asp Phe Ile Glu Ser Trp Lys Gln Val
            115             120             125
Ala Thr Gln Glu Val Ser Gly Ile Tyr Ala Phe Ala Leu Asn Pro Ile
    130                 135                 140
Lys Asn Val Arg Lys Ile Gln Glu Gly His Leu Ser Ile Asp His Phe
145                 150                 155                 160
Gly Val His Ser Pro Asn Glu Ser Thr Leu Val Val Thr Leu Glu Ser
            165                 170                 175
Pro Thr Ser His Phe Leu Lys Leu Leu Ala Leu Pro Val Phe Phe Pro
            180             185                 190
Val His Lys Ser Gln Arg Thr Leu Gln Ser Lys Ser Leu Pro Ile Ala
        195             200             205
Ser Gly Ala Phe Tyr Pro Lys Asn Ile Lys Gln Lys Gln Trp Ile Lys
    210             215             220
Leu Ser Lys Asn Pro His Tyr Tyr Asn Gln Ser Gln Val Glu Thr Lys
225             230             235             240
Thr Ile Thr Ile His Phe Ile Pro Asp Ala Asn Thr Ala Ala Lys Leu
            245             250             255
Phe Asn Gln Gly Lys Leu Asn Trp Gln Gly Pro Pro Trp Gly Glu Arg
            260             265             270
Ile Pro Gln Glu Thr Leu Ser Asn Leu Gln Ser Lys Gly His Leu His
            275             280             285
Ser Phe Asp Val Ala Gly Thr Ser Trp Leu Thr Phe Asn Ile Asn Lys
    290             295             300
Phe Pro Leu Asn Asn Met Lys Leu Arg Glu Ala Leu Ala Ser Ala Leu
305             310             315                 320
Asp Lys Glu Ala Leu Val Ser Thr Ile Phe Leu Gly Arg Ala Lys Thr
            325             330             335
Ala Asp His Leu Leu Pro Thr Asn Ile His Ser Tyr Pro Glu His Gln
            340             345             350
Lys Gln Glu Met Ala Gln Arg Gln Ala Tyr Ala Lys Lys Leu Phe Lys
    355             360             365
Glu Ala Leu Glu Glu Leu Gln Ile Thr Ala Lys Asp Leu Glu His Leu
    370             375             380
Asn Leu Ile Phe Pro Val Ser Ser Ser Ala Ser Ser Leu Leu Val Gln
385             390             395             400
Leu Ile Arg Glu Gln Trp Lys Glu Ser Leu Gly Phe Ala Ile Pro Ile
            405             410             415
Val Gly Lys Glu Phe Ala Leu Leu Gln Ala Asp Leu Ser Ser Gly Asn
            420             425             430
Phe Ser Leu Ala Thr Gly Gly Trp Phe Ala Asp Phe Ala Asp Pro Met
        435             440             445
Ala Phe Leu Thr Ile Phe Ala Tyr Pro Ser Gly Val Pro Pro Tyr Ala
    450             455             460
Ile Asn His Lys Asp Phe Leu Glu Ile Leu Gln Asn Ile Glu Gln Glu
465             470             475             480
Gln Asp His Gln Lys Arg Ser Glu Leu Val Ser Gln Ala Ser Leu Tyr
            485             490             495
Leu Glu Thr Phe His Ile Ile Glu Pro Ile Tyr His Asp Ala Phe Gln
            500             505             510
Phe Ala Met Asn Lys Lys Leu Ser Asn Leu Gly Val Ser Pro Thr Gly
            515             520             525
Val Val Asp Phe Arg Tyr Ala Lys Glu Asn
530             535
```

<210> 198
<211> 538
<212> PRT
<213> Chlamydia pneumoniae

<400> 198

```
Lys Leu Lys Ser Tyr Ser Lys Glu Arg Ser Phe Met Leu Arg Phe Phe
1               5                   10                  15
Ala Val Phe Ile Ser Thr Leu Trp Leu Ile Thr Ser Gly Cys Ser Pro
            20                  25                  30
Ser Gln Ser Ser Lys Gly Ile Phe Val Val Asn Met Lys Glu Met Pro
        35                  40                  45
Arg Ser Leu Asp Pro Gly Lys Thr Arg Leu Ile Ala Asp Gln Thr Leu
    50                  55                  60
Met Arg His Leu Tyr Glu Gly Leu Val Glu Glu His Ser Gln Asn Gly
65                  70                  75                  80
Glu Ile Lys Pro Ala Leu Ala Glu Ser Tyr Thr Ile Ser Glu Asp Gly
                85                  90                  95
Thr Arg Tyr Thr Phe Lys Ile Lys Asn Ile Leu Trp Ser Asn Gly Asp
            100                 105                 110
Pro Leu Thr Ala Gln Asp Phe Val Ser Ser Trp Lys Glu Ile Leu Lys
        115                 120                 125
Glu Asp Ala Ser Ser Val Tyr Leu Tyr Ala Phe Leu Pro Ile Lys Asn
    130                 135                 140
Ala Arg Ala Ile Phe Asp Asp Thr Glu Ser Pro Glu Asn Leu Gly Val
145                 150                 155                 160
Arg Ala Leu Asp Lys Arg His Leu Glu Ile Gln Leu Glu Thr Pro Cys
                165                 170                 175
Ala His Phe Leu His Phe Leu Thr Leu Pro Ile Phe Phe Pro Val His
            180                 185                 190
Glu Thr Leu Arg Asn Tyr Ser Thr Ser Phe Glu Glu Met Pro Ile Thr
        195                 200                 205
Cys Gly Ala Phe Arg Pro Val Ser Leu Glu Lys Gly Leu Arg Leu His
210                 215                 220
Leu Glu Lys Asn Pro Met Tyr His Asn Lys Ser Arg Val Lys Leu His
225                 230                 235                 240
Lys Ile Ile Val Gln Phe Ile Ser Asn Ala Asn Thr Ala Ala Ile Leu
                245                 250                 255
Phe Lys His Lys Lys Leu Asp Trp Gln Gly Pro Pro Trp Gly Glu Pro
            260                 265                 270
Ile Pro Pro Glu Ile Ser Ala Ser Leu His Gln Asp Asp Gln Leu Phe
        275                 280                 285
Ser Leu Pro Gly Ala Ser Thr Thr Trp Leu Leu Phe Asn Ile Gln Lys
    290                 295                 300
Lys Pro Trp Asn Asn Ala Lys Leu Arg Lys Ala Leu Ser Leu Ala Ile
305                 310                 315                 320
Asp Lys Asp Met Leu Thr Lys Val Val Tyr Gln Gly Leu Ala Glu Pro
                325                 330                 335
Thr Asp His Ile Leu His Pro Arg Leu Tyr Pro Gly Thr Tyr Pro Glu
            340                 345                 350
Arg Lys Arg Gln Asn Glu Arg Ile Leu Glu Ala Gln Gln Leu Phe Glu
        355                 360                 365
Glu Ala Leu Asp Glu Leu Gln Met Thr Arg Glu Asp Leu Glu Lys Glu
    370                 375                 380
Thr Leu Thr Phe Ser Thr Phe Ser Phe Ser Tyr Gly Arg Ile Cys Gln
385                 390                 395                 400
Met Leu Arg Glu Gln Trp Lys Lys Val Leu Lys Phe Thr Ile Pro Ile
                405                 410                 415
Val Gly Gln Glu Phe Phe Thr Ile Gln Lys Asn Phe Leu Glu Gly Asn
            420                 425                 430
```

514

```
Tyr Ser Leu Thr Val Asn Gln Trp Thr Ala Ala Phe Ile Asp Pro Met
        435                 440                 445
Ser Tyr Leu Met Ile Phe Ala Asn Pro Gly Gly Ile Ser Pro Tyr His
        450                 455                 460
Leu Gln Asp Ser His Phe Gln Thr Leu Leu Ile Lys Ile Thr Gln Glu
465                     470                 475                 480
His Lys Lys His Leu Arg Asn Gln Leu Ile Ile Glu Ala Leu Asp Tyr
                485                 490                 495
Leu Glu His Cys His Ile Leu Glu Pro Leu Cys His Pro Asn Leu Arg
            500                 505                 510
Ile Ala Leu Asn Lys Asn Ile Lys Asn Phe Asn Leu Phe Val Arg Arg
        515                 520                 525
Thr Ser Asp Phe Arg Phe Ile Glu Lys Leu
        530                 535

        <210> 199
        <211> 457
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 199
Lys Asn Tyr Arg Arg Lys Ser Leu Asp Leu Lys Phe Asp Ser Lys Phe
1               5                   10                  15
Ile Lys Val Ile Phe Lys Met Phe Ser Arg Trp Ile Thr Leu Phe Leu
        20                  25                  30
Leu Phe Ile Ser Leu Thr Gly Cys Ser Ser Tyr Ser Ser Lys His Lys
        35                  40                  45
Gln Ser Leu Ile Ile Pro Ile His Asp Asp Pro Val Ala Phe Ser Pro
    50                  55                  60
Glu Gln Ala Lys Arg Ala Met Asp Leu Ser Ile Ala Gln Leu Leu Phe
65                  70                  75                  80
Asp Gly Leu Thr Arg Glu Thr His Arg Glu Ser Asn Asp Leu Glu Leu
                85                  90                  95
Ala Ile Ala Ser Arg Tyr Thr Val Ser Glu Asp Phe Cys Ser Tyr Thr
            100                 105                 110
Phe Phe Ile Lys Asp Ser Ala Leu Trp Ser Asp Gly Thr Pro Ile Thr
        115                 120                 125
Ser Glu Asp Ile Arg Asn Ala Trp Glu Tyr Ala Gln Glu Asn Ser Pro
    130                 135                 140
His Ile Gln Ile Phe Gln Gly Leu Asn Phe Ser Thr Pro Ser Ser Asn
145                 150                 155                 160
Ala Ile Thr Ile His Leu Asp Ser Pro Asn Pro Asp Phe Pro Lys Leu
                165                 170                 175
Leu Ala Phe Pro Ala Phe Ala Ile Phe Lys Pro Glu Asn Pro Lys Leu
            180                 185                 190
Phe Ser Gly Pro Tyr Thr Leu Val Glu Tyr Phe Pro Gly His Asn Ile
        195                 200                 205
His Leu Lys Lys Asn Pro Asn Tyr Tyr Asp Tyr His Cys Val Ser Ile
    210                 215                 220
Asn Ser Ile Lys Leu Leu Ile Ile Pro Asp Ile Tyr Thr Ala Ile His
225                 230                 235                 240
Leu Leu Asn Arg Gly Lys Val Asp Trp Val Gly Gln Pro Trp His Gln
                245                 250                 255
Gly Ile Pro Trp Glu Leu His Lys Gln Ser Gln Tyr His Tyr Tyr Thr
            260                 265                 270
Tyr Pro Val Glu Gly Ala Phe Trp Leu Cys Leu Asn Thr Lys Ser Pro
        275                 280                 285
His Leu Asn Asp Leu Gln Asn Arg His Arg Leu Ala Thr Cys Ile Asp
    290                 295                 300
Lys Arg Ser Ile Ile Glu Glu Ala Leu Gln Gly Thr Gln Gln Pro Ala
305                 310                 315                 320
```

```
Glu Thr Leu Ser Arg Gly Ala Pro Gln Pro Asn Gln Tyr Lys Lys Gln
            325                 330                 335
Lys Pro Leu Thr Pro Gln Glu Lys Leu Val Leu Thr Tyr Pro Ser Asp
            340                 345                 350
Ile Leu Arg Cys Gln Arg Ile Ala Glu Ile Leu Lys Glu Gln Trp Lys
            355                 360                 365
Ala Ala Gly Ile Asp Leu Ile Leu Glu Gly Leu Glu Tyr His Leu Phe
    370                 375                 380
Val Asn Lys Arg Lys Val Gln Asp Tyr Ala Ile Ala Thr Gln Thr Gly
385                 390                 395                 400
Val Ala Tyr Tyr Pro Gly Ala Asn Leu Ile Ser Glu Glu Asp Lys Leu
            405                 410                 415
Leu Gln Asn Phe Glu Ile Ile Pro Ile Tyr Tyr Leu Ser Tyr Asp Tyr
            420                 425                 430
Leu Thr Gln Asp Phe Ile Glu Gly Val Ile Tyr Asn Ala Ser Gly Ala
            435                 440                 445
Val Asp Leu Lys Tyr Thr Tyr Phe Pro
    450                 455
```

        <210> 200
        <211> 534
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 200
```
Gln Ile Glu Tyr Tyr Ile Met Lys Met His Arg Leu Lys Pro Thr Leu
1               5               10                  15
Lys Ser Leu Ile Pro Asn Leu Leu Phe Leu Leu Leu Thr Leu Ser Ser
            20              25                  30
Cys Ser Lys Gln Lys Gln Glu Pro Leu Gly Lys His Leu Val Ile Ala
            35              40                  45
Met Ser His Asp Leu Ala Asp Leu Asp Pro Arg Asn Ala Tyr Leu Ser
    50              55                  60
Arg Asp Ala Ser Leu Ala Lys Ala Leu Tyr Glu Gly Leu Thr Arg Glu
65              70                  75                  80
Thr Asp Gln Gly Ile Ala Leu Ala Leu Ala Glu Ser Tyr Thr Leu Ser
            85                  90                  95
Lys Asp His Lys Val Tyr Thr Phe Lys Leu Arg Pro Ser Val Trp Ser
            100                 105                 110
Asp Gly Thr Pro Leu Thr Ala Tyr Asp Phe Glu Lys Ser Ile Lys Gln
            115                 120                 125
Leu Tyr Phe Glu Glu Phe Ser Pro Ser Ile His Thr Leu Leu Gly Val
    130             135                 140
Ile Lys Asn Ser Ser Ala Ile His Asn Ala Gln Lys Ser Leu Glu Thr
145             150                 155                 160
Leu Gly Ile Gln Ala Lys Asp Asp Leu Thr Leu Val Ile Thr Leu Glu
            165                 170                 175
Gln Pro Phe Pro Tyr Phe Leu Thr Leu Ile Ala Arg Pro Val Phe Ser
            180                 185                 190
Pro Val His His Thr Leu Arg Glu Ser Tyr Lys Lys Gly Thr Pro Pro
    195                 200                 205
Ser Thr Tyr Ile Ser Asn Gly Pro Phe Val Leu Lys Lys His Glu His
    210             215                 220
Gln Asn Tyr Leu Ile Leu Glu Lys Asn Pro His Tyr Tyr Asp His Glu
225             230                 235                 240
Ser Val Lys Leu Asp Arg Val Thr Leu Lys Ile Ile Pro Asp Ala Ser
            245                 250                 255
Thr Ala Thr Lys Leu Phe Lys Ser Lys Ser Ile Asp Trp Ile Gly Ser
            260             265                 270
Pro Trp Ser Ala Pro Ile Ser Asn Glu Asp Gln Lys Val Leu Ser Gln
    275                 280                 285
```

516

Glu Lys Ile Leu Thr Tyr Ser Val Ser Ser Thr Thr Leu Leu Ile Tyr
    290   295   300
Asn Leu Gln Lys Pro Leu Ile Gln Asn Lys Ala Leu Arg Lys Ala Ile
305   310   315   320
Ala His Ala Ile Asp Arg Lys Ser Ile Leu Arg Leu Val Pro Ser Gly
                325   330   335
Gln Glu Ala Val Thr Leu Val Pro Pro Asn Leu Ser Gln Leu Asn Leu
                340   345   350
Gln Lys Glu Ile Ser Thr Glu Glu Arg Gln Thr Lys Ala Arg Ala Tyr
            355   360   365
Phe Gln Glu Ala Lys Glu Thr Leu Ser Glu Lys Glu Leu Ala Glu Leu
    370   375   380
Ser Ile Leu Tyr Pro Ile Asp Ser Ser Asn Ser Ser Ile Ile Ala Gln
385   390   395   400
Glu Ile Gln Arg Gln Leu Lys Asp Thr Leu Gly Leu Lys Ile Lys Ile
                405   410   415
Gln Gly Met Glu Tyr His Cys Phe Leu Lys Lys Arg Arg Gln Gly Asp
                420   425   430
Phe Phe Ile Ala Thr Gly Gly Trp Ile Ala Glu Tyr Val Ser Pro Val
            435   440   445
Ala Phe Leu Ser Ile Leu Gly Asn Pro Arg Asp Leu Thr Gln Trp Arg
    450   455   460
Asn Ser Asp Tyr Glu Lys Thr Leu Glu Lys Leu Tyr Leu Pro His Ala
465   470   475   480
Tyr Lys Glu Asn Leu Lys Arg Ala Glu Met Ile Ile Glu Glu Glu Thr
                485   490   495
Pro Ile Ile Pro Leu Tyr His Gly Lys Tyr Ile Tyr Ala Ile His Pro
            500   505   510
Lys Ile Gln Asn Thr Phe Gly Ser Leu Leu Gly His Thr Asp Leu Lys
    515   520   525
Asn Ile Asp Ile Leu Ser
    530

        <210> 201
        <211> 322
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 201
Lys Cys Leu Ile Gly Leu Ser Leu Val Phe Ser Tyr Ile Lys Asn Arg
1   5   10   15
Ile Leu Phe Asn Leu Leu Ser Leu Trp Ile Val Leu Thr Leu Thr Phe
                20   25   30
Leu Val Met Lys Thr Ile Pro Gly Asp Pro Phe Asn Asp Glu Gly Cys
            35   40   45
Asn Val Leu Ser Glu Glu Val Leu Gln Thr Leu Lys Ser Arg Tyr Gly
        50   55   60
Leu Asp Lys Pro Leu Tyr Gln Gln Tyr Thr Gln Tyr Leu His Ser Ile
65   70   75   80
Ala Lys Leu Asp Phe Gly Asn Ser Leu Val Tyr Lys Asp Arg Lys Val
                85   90   95
Thr Asn Ile Ile Ser Thr Ala Phe Pro Ile Ser Ala Ile Leu Gly Leu
                100   105   110
Gln Ser Leu Phe Leu Ser Ile Gly Gly Gly Ile Ala Leu Gly Thr Ile
    115   120   125
Ala Ala Leu Lys Lys Lys Lys Gln Arg Arg Tyr Ile Leu Gly Ala Ser
    130   135   140
Ile Leu Gln Ile Ser Ile Pro Ala Phe Ile Phe Ala Thr Leu Leu Gln
145   150   155   160
Tyr Val Phe Ala Val Lys Ile Pro Leu Leu Pro Ile Ala Cys Trp Gly
                165   170   175

517

```
Ser Phe Thr His Thr Ile Leu Pro Thr Leu Ala Leu Ala Val Thr Pro
            180                 185                 190
Met Ala Phe Ile Ile Gln Leu Thr Tyr Ser Ser Val Ser Ala Ala Leu
            195                 200                 205
Asn Lys Asp Tyr Val Leu Leu Ala Tyr Ala Lys Gly Leu Ser Pro Leu
        210                 215                 220
Lys Val Val Ile Lys His Ile Leu Pro Tyr Ala Ile Phe Pro Thr Ile
225                 230                 235                 240
Ser Tyr Ser Ala Phe Leu Thr Thr Thr Val Ile Thr Gly Thr Phe Ala
                245                 250                 255
Ile Glu Asn Ile Phe Cys Ile Pro Gly Leu Gly Lys Trp Phe Ile Cys
            260                 265                 270
Ser Ile Lys Gln Arg Asp Tyr Pro Val Ala Leu Gly Leu Ser Val Phe
        275                 280                 285
Tyr Gly Thr Leu Phe Met Leu Ser Ser Leu Leu Ser Asp Leu Ile Gln
    290                 295                 300
Ser Ile Ile Asp Pro Gln Ile Arg Tyr Ala His Gly Lys Glu Lys Lys
305                 310                 315                 320
Arg Lys


        <210> 202
        <211> 291
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 202
Glu Lys Lys Lys His Lys Leu Met Glu Asn Leu Ser Ser Ala Pro Ser
1                   5                   10                  15
Arg Ser Ile Trp Lys Ser Ile Ile Gln Asn Lys Met Leu Val Leu Gly
            20                  25                  30
Leu Thr Thr Leu Ile Ile Leu Met Leu Gly Ala Leu Leu Leu Pro Trp
        35                  40                  45
Phe Tyr Gln Asp Tyr Glu Gln Thr Ser Leu Lys Asp Ile Leu Val Ser
    50                  55                  60
Pro Cys Ser Arg Phe Pro Phe Gly Thr Asp Thr Leu Gly Arg Cys Met
65                  70                  75                  80
Phe Ala Arg Thr Leu Arg Gly Leu Arg Leu Ser Leu Leu Ile Ala Thr
            85                  90                  95
Ile Ala Thr Leu Ile Asp Val Cys Val Gly Leu Leu Trp Ala Thr Val
            100                 105                 110
Ala Ile Ser Gly Gly Lys Lys Ile Asp Phe Leu Met Met Arg Thr Thr
        115                 120                 125
Glu Ile Leu Phe Ser Leu Pro Arg Ile Pro Ile Ile Ile Leu Leu Leu
    130                 135                 140
Val Ile Phe His His Gly Leu Leu Pro Leu Ile Leu Ala Met Thr Ile
145                 150                 155                 160
Thr Gly Trp Ile Pro Ile Ser Arg Ile Ile Tyr Gly Gln Phe Leu Leu
                165                 170                 175
Leu Lys Asn Lys Pro Phe Val Leu Ser Ala Lys Ala Met His Ala Ser
            180                 185                 190
Thr Phe His Ile Leu Lys Lys His Leu Leu Pro Asn Thr Leu Ala Pro
            195                 200                 205
Ile Ile Ser Thr Leu Ile Phe Thr Ile Pro Asn Ala Ile Tyr Thr Glu
        210                 215                 220
Ala Phe Ile Ser Phe Leu Gly Leu Gly Ile Gln Pro Pro Gln Ala Ser
225                 230                 235                 240
Leu Gly Thr Leu Val Lys Glu Gly Ile Asn Ala Ile Asp Tyr Tyr Pro
                245                 250                 255
Trp Leu Phe Phe Phe Pro Ser Leu Ile Met Ile Ala Leu Ser Ile Ser
            260                 265                 270
```

518

```
Phe Asn Leu Ile Gly Glu Gly Ala Lys Thr Leu Cys Leu Glu Glu Gly
        275                 280                 285
Ser His Gly
    290


        <210> 203
        <211> 302
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 203
Ala Ser Ile Ser Ser Ala Arg Gly Leu Lys His Tyr Val Ser Lys Arg
1               5                   10                  15
Asp Leu Met Asp Asn Tyr Leu Leu Asn Ile Lys Asp Leu Thr Ile Thr
            20                  25                  30
Ser Thr Asn Pro Lys Arg Thr Leu Ile Glu Asn Leu Ser Leu Gln Leu
        35                  40                  45
Lys Glu Asn Arg Asn Leu Ala Leu Val Gly Glu Ser Gly Ser Gly Lys
    50                  55                  60
Thr Thr Ile Thr Lys Ala Ile Leu Gly Phe Leu Pro Glu Asn Cys Leu
65                  70                  75                  80
Ile Lys Thr Gly Ser Ile Leu Phe Glu Asp Ile Asp Ile Thr Lys Leu
            85                  90                  95
Ser Pro Lys Glu Leu His Lys Ile Arg Gly Gln Lys Ile Ala Thr Ile
        100                 105                 110
Leu Gln Asn Ala Met Gly Ser Leu Thr Pro Ser Met Arg Ile Gly Met
        115                 120                 125
Gln Ile Ile Glu Thr Leu Arg Gln His His Lys Met Asn Lys Glu Glu
    130                 135                 140
Ala Tyr Asn Lys Ala Met Gln Leu Leu Thr Asp Val Cys Ile Pro Asn
145                 150                 155                 160
Pro Lys Tyr Ser Phe Ser Gln Tyr Pro Phe Glu Leu Ser Gly Gly Met
            165                 170                 175
Arg Gln Arg Val Val Ile Ala Ile Ala Leu Ala Ser Gln Pro Lys Leu
        180                 185                 190
Ile Leu Ala Asp Glu Pro Thr Thr Ala Leu Asp Ser Met Ser Gln Ala
        195                 200                 205
Gln Val Leu Arg Ile Leu Arg Asn Ile Gln Gln Gln Lys Gln Ala Thr
    210                 215                 220
Ile Leu Leu Val Thr His Asn Leu Ser Leu Val Lys Glu Leu Cys Asn
225                 230                 235                 240
Asp Ile Cys Ile Ile Lys Asp Gly Lys Leu Ile Glu Thr Gly Thr Val
            245                 250                 255
Glu Glu Ile Phe Leu Ser Pro Lys His Pro Tyr Thr Leu Lys Leu Leu
            260                 265                 270
Asn Ala Val Ser Lys Ile Pro Ile Lys Lys Thr Ser Ser Pro Ile Leu
        275                 280                 285
Lys Asn Lys Phe Gln Pro Leu Met Ser Met Gln Gly Gly Leu
    290                 295                 300


        <210> 204
        <211> 273
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 204
Val Pro Thr Ser Asn Glu Tyr Ala Arg Trp Phe Met Thr Thr Leu Leu
1               5                   10                  15
Ser Ile Lys Asp Leu Ser Leu Thr Ile Arg Gly Lys Lys Ile Leu Asn
            20                  25                  30
```

519

```
His Ile Asn Leu Asn Leu Ile Lys Gly Ser Tyr Leu Thr Ile Val Gly
        35                  40                  45
Pro Ser Gly Ser Gly Lys Ser Ser Leu Ala Leu Thr Ile Leu Asp Leu
    50                  55                  60
Leu Lys Pro Thr Thr Gly Thr Ile Thr Phe His Met Asp Pro Lys Ile
65                  70                  75                  80
Pro Arg Ala Arg Lys Val Gln Val Ile Trp Gln Asp Ile Asp Ser Ser
                85                  90                  95
Leu Asn Pro Cys Met Ser Ile Lys Gly Ile Ile Ser Glu Pro Leu Asn
            100                 105                 110
Ile Ile Gly Thr Tyr Ser Lys Ala Glu Gln Asn Lys Glu Ile Tyr Asn
        115                 120                 125
Val Leu Asp Leu Val Asn Leu Pro Lys Ser Val Leu His Leu Lys Pro
    130                 135                 140
Tyr Lys Leu Ser Gly Gly Gln Lys Gln Arg Ile Ala Ile Ala Lys Ala
145                 150                 155                 160
Leu Val Ser Lys Pro Glu Leu Leu Ile Cys Asp Glu Pro Leu Ser Ser
                165                 170                 175
Leu Asp Thr Leu Asn Gln Ser Leu Ile Leu Asp Leu Phe Gln Thr Ile
            180                 185                 190
Lys Lys Glu Tyr Gln Asn Thr Leu Leu Phe Ile Thr His Asp Met Ser
        195                 200                 205
Ala Ala Tyr Tyr Ile Ala Asp Thr Ile Ala Val Met Asp Gln Gly Ser
    210                 215                 220
Leu Val Glu His Ala Cys Arg Glu Lys Ile Phe Ser Thr Pro Lys His
225                 230                 235                 240
Thr Thr Thr Gln Asp Leu Leu Asp Ala Ile Pro Ile Phe Ser Leu Ile
                245                 250                 255
Ser Thr Glu Met Glu Pro Ser Glu Glu Tyr Glu Leu Gln Val Ala Ser
                260                 265                 270
Lys
```

```
<210> 205
<211> 279
<212> PRT
<213> Chlamydia pneumoniae

<400> 205
Ile Val Pro Leu Pro Gln Lys Asn Asn Lys Glu Thr Ser Cys Met Asn
1               5                   10                  15
Thr Tyr Thr Phe Ser Pro Thr Leu Gln Lys Ser Phe Ser Leu Phe Leu
                20                  25                  30
Leu Glu Lys Leu Asp Ser Tyr Phe Phe Phe Gly Gly Thr Arg Thr Gln
        35                  40                  45
Ile Leu Val Ile Thr Pro Thr Asn Ile Arg Leu Ala Ala Lys Lys Arg
    50                  55                  60
Gly Cys Lys Val Ser Thr Ile Glu Lys Ile Ile Lys Ile Leu Ser Phe
65                  70                  75                  80
Ile Leu Leu Pro Leu Val Ile Ile Ala Phe Ile Leu Arg Tyr Phe Leu
                85                  90                  95
His Lys Lys Phe Asp Lys Gln Phe Leu Cys Ile Pro Lys Val Ile Ser
            100                 105                 110
Asn Glu Asp Glu Ala Leu Leu Gly Ser Arg Pro Gln Ala Val Glu Lys
        115                 120                 125
Ala Val Arg Glu Ile Ser Pro Ala Phe Phe Ser Ile Pro Arg Lys Tyr
    130                 135                 140
Gln Leu Ile Arg Ile Asp Thr Pro Lys Asp Asp Ala Pro Ser Ile Leu
145                 150                 155                 160
Phe Pro Ile Gly Ile Glu Ile Ile Leu Lys Asp Leu Cys Ile Asp Thr
                165                 170                 175
```

520

```
Leu Lys Gln Ser Asn Leu Phe Leu Lys Arg Glu Met Asp Phe Leu Gly
        180                 185                 190
His Pro Glu Glu Lys Ala Leu Phe Asp Ser Ile Cys Ser Ile Glu Lys
        195                 200                 205
Asp Gln Glu Trp Met Ser Leu Glu Ser Lys Lys Leu Leu Ile Thr His
    210                 215                 220
Phe Leu Lys Tyr Leu Phe Val Ser Gly Ile Glu Gln Leu Asn Pro Gly
225                 230                 235                 240
Phe Asn Pro Glu Asn Gly Arg Gly Tyr Phe Ser Glu Ile Ser Thr Ala
            245                 250                 255
Lys Ile His Phe His Gln His Gly Arg Tyr Gly Pro Ile Arg Ser Ser
            260                 265                 270
Gly Pro Ile Met Lys Glu Ile
        275


        <210> 206
        <211> 104
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 206
Pro Arg Glu Trp Ala Trp Val Phe Phe Arg Asn Lys Tyr Ser Lys Asp
1               5                   10                  15
Pro Phe Ser Ser Ala Arg Ser Ile Trp Ala Asn Pro Phe Phe Gly Thr
            20                  25                  30
His His Glu Gly Asn Ile Lys Ile Lys Gly Met Gly Tyr Gln Ile Phe
        35                  40                  45
Thr Arg Leu Lys Lys Leu Gly Ile Ser Phe Ser Ser Tyr Asn Ser Ile
    50                  55                  60
Asn Pro Asn Pro Tyr Phe Phe Asp Glu Gly Cys Phe Val Tyr Trp Glu
65                  70                  75                  80
Ser Gln Phe Lys Ser Ala Leu Gln Asp His Gly Ile Leu Gln Lys Gln
            85                  90                  95
Thr Glu Thr Phe Tyr Arg Asn Thr
            100


        <210> 207
        <211> 85
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 207
Ile Glu Asp Ser Ile Lys Gly Tyr Gly Ser Ala Ser Ala Phe Arg Asn
1               5                   10                  15
Pro Pro Gln Leu Leu Leu Lys Phe Phe Leu Val Cys Glu Glu Leu Cys
            20                  25                  30
Ile Leu Thr Val Ala Thr His Arg Ala Leu Leu Glu Thr Pro Leu Ala
        35                  40                  45
Leu Ser Phe Phe Lys Glu Leu Lys Thr Lys Tyr Val Tyr Arg Ala Lys
        50                  55                  60
Asp Ile Leu Gln Leu His Asn Tyr Lys Gly Phe Thr Ile Leu Asn Thr
65                  70                  75                  80
Ser Pro Leu Cys Ser
            85

        <210> 208
        <211> 272
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 208

```
Ile Val Asp Arg Arg Ser Pro Ala Cys Tyr Asp Ser Ile Asn Ser Asp
1               5                   10                  15
Ala Ile Gly Val Ser Leu Leu Met Asp Ile Ser His Ile Leu Glu Asp
            20                  25                  30
Leu Ala Tyr Asp Glu Gly Ile Leu Pro Arg Glu Ala Ile Glu Ala Ala
        35                  40                  45
Ile Val Lys Gln Met Gln Ile Thr Pro Tyr Leu Leu His Ile Leu His
    50                  55                  60
Asp Ala Thr Gln Arg Val Pro Glu Ile Val Asn Asp Gly Ser Tyr Gln
65                  70                  75                  80
Gly His Leu Tyr Ala Met Tyr Leu Leu Ala Gln Phe Arg Glu Ser Arg
            85                  90                  95
Ala Leu Pro Leu Ile Ile Lys Leu Phe Ala Phe Glu Asp Asp Thr Pro
            100                 105                 110
His Ala Ile Ala Gly Asp Val Leu Thr Glu Asp Leu Pro Arg Ile Leu
    115                 120                 125
Ala Ser Val Cys Asn Asp Asp Ser Leu Ile Lys Glu Leu Ile Glu Thr
    130                 135                 140
Pro Lys Ile Asn Pro Tyr Val Lys Ala Ala Ala Ile Ser Gly Leu Val
145                 150                 155                 160
Thr Leu Val Gly Ala Gly Lys Ile Pro Arg Asp Lys Val Ile Arg Tyr
            165                 170                 175
Phe Ala Glu Leu Leu Asn Tyr Arg Leu Glu Lys Gln Pro Ser Phe Ala
            180                 185                 190
Trp Asp Asn Leu Ile Ala Gly Ile Cys Thr Leu Tyr Pro Gly Glu Leu
            195                 200                 205
Phe Tyr Pro Ile Ser Lys Ala Phe Asp Gly Gly Leu Val Asp Thr Ser
210                 215                 220
Phe Ile Ser Met Glu Asp Val Glu Asn Ile Ile His Glu Glu Thr Val
225                 230                 235                 240
Glu Ser Cys Ile His Thr Leu Cys Ser Ser Thr Glu Leu Ile Asn Asp
            245                 250                 255
Thr Leu Glu Glu Met Glu Lys Trp Leu Glu Asp Phe Pro Ile Glu Pro
            260                 265                 270
```

<210> 209
<211> 470
<212> PRT
<213> Chlamydia pneumoniae

<400> 209

```
Val Asn Lys Lys Lys Arg Phe Leu Ser Leu Leu Phe Leu Thr Ala Val
1               5                   10                  15
Leu Leu Gly Ile Trp Phe Ser Pro His Pro Ala Ser Ile Asn Ser Asn
            20                  25                  30
Ala Trp Gln Leu Phe Ala Ile Phe Thr Thr Thr Ile Met Gly Ile Ile
        35                  40                  45
Phe Gln Pro Val Pro Met Gly Ala Ile Ala Ile Ile Gly Ile Ser Thr
    50                  55                  60
Leu Leu Leu Thr Gln Thr Leu Thr Leu Glu Gln Gly Leu Ser Gly Phe
65                  70                  75                  80
His Asn Pro Ile Ala Trp Leu Val Phe Leu Ser Phe Ser Ile Ala Lys
            85                  90                  95
Gly Ile Ile Lys Thr Gly Leu Gly Glu Arg Ile Ala Tyr Phe Phe Val
            100                 105                 110
Ser Ala Leu Gly Lys Ser Pro Leu Gly Leu Ser Tyr Gly Leu Val Ile
    115                 120                 125
Thr Asp Phe Phe Leu Ala Pro Ala Ile Pro Ser Val Thr Ala Arg Ala
    130                 135                 140
```

522

```
Gly Gly Ile Leu Tyr Pro Val Val Thr Ser Leu Ser Asp Ser Phe Gly
145             150             155             160
Ser Ser Ala Glu Lys Gly Thr Gln Asp Leu Ile Gly Ser Phe Leu Ile
            165             170             175
Lys Val Ala Tyr Gln Ser Ser Val Ile Thr Ser Ala Met Phe Leu Thr
            180             185             190
Ala Met Ala Gly Asn Pro Leu Val Ala Ala Leu Ala Gly His Val Gly
        195             200             205
Val Ser Leu Ser Trp Val Leu Trp Ala Lys Ala Ala Ile Ile Pro Gly
    210             215             220
Leu Pro Ser Leu Phe Leu Met Pro Ile Ile Leu Tyr Lys Leu Tyr Pro
225             230             235             240
Pro Lys Ile Thr Ser Cys Glu Glu Ala Ile Arg Ser Ala Lys Leu Arg
            245             250             255
Leu Lys Glu Met Gly Pro Leu Lys Lys Glu Glu Lys Thr Ile Leu Met
            260             265             270
Ile Phe Phe Leu Leu Val Val Leu Trp Thr Phe Gly Asp Leu Leu Gly
    275             280             285
Ile Ser Ala Thr Thr Ala Ala Leu Ile Gly Leu Ser Leu Leu Ile Leu
    290             295             300
Thr Asn Ile Leu Asp Trp Gln Lys Asp Val Ile Ala Asn Thr Thr Ala
305             310             315             320
Trp Glu Thr Phe Ile Trp Phe Gly Ala Leu Ile Met Met Ala Ser Phe
            325             330             335
Leu Asn Gln Leu Gly Phe Ile Pro Leu Val Gly Asp Ser Ala Ala Ala
        340             345             350
Leu Val Ser Gly Leu Ser Trp Lys Ile Gly Phe Pro Leu Leu Phe Leu
        355             360             365
Ile Tyr Phe Tyr Ser His Tyr Leu Phe Ala Ser Asn Thr Ala His Ile
    370             375             380
Gly Ala Met Tyr Pro Ile Phe Leu Ala Val Ser Ile Ser Leu Gly Thr
385             390             395             400
Asn Pro Ile Phe Ala Ala Leu Thr Leu Ala Phe Ala Ser Asn Leu Phe
            405             410             415
Gly Gly Leu Thr His Tyr Gly Ser Gly Pro Ala Pro Leu Tyr Phe Gly
        420             425             430
Ser His Leu Val Thr Val Gln Glu Trp Trp Arg Ser Gly Phe Ala Leu
        435             440             445
Ser Ile Val Asn Ile Val Ile Trp Ile Gly Ile Gly Ser Leu Trp Trp
450             455             460
Lys Ala Leu Gly Leu Ile
465             470


        <210> 210
        <211> 556
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 210
Ser Val Ala Val Ile Leu Met His Pro Leu Tyr Val Asp Leu Asp Thr
1           5               10              15
Ile Ile Ser Ser Tyr Ser Pro Pro Leu Pro Lys Glu Phe Gln Glu Ala
            20              25              30
Ala Ser Leu Ile Ala Val Pro Asp Thr Ser His Ser Lys Pro Val Val
        35              40              45
Pro Gly Val Lys Thr Leu Phe Pro Gln Thr Tyr His Leu Pro Tyr Leu
    50              55              60
Lys Phe Val Gln Gly Glu Asn Val Val His Thr Pro Leu Lys Val Gly
65              70              75              80
Val Met Phe Ser Gly Gly Pro Ala Pro Gly Gly His Asn Val Ile Gln
            85              90              95
```

```
Gly Leu Phe Asn Ser Leu Lys Asp Phe His Pro Asp Ser Ser Leu Val
        100                     105                     110
Gly Phe Val Asn Asn Gly Asp Gly Leu Thr Asn Asn Lys Ser Ile Asp
        115                     120                     125
Ile Thr Glu Glu Phe Leu Ser Lys Phe Arg Asn Ser Gly Gly Phe Asn
    130                     135                     140
Cys Ile Gly Thr Gly Arg Lys Lys Ile Val Thr Pro Glu Ala Lys Glu
145                     150                     155                 160
Ala Cys Leu Lys Thr Ala Glu Ala Leu Asp Leu Asp Gly Leu Val Ile
                165                     170                     175
Ile Gly Gly Asp Gly Ser Asn Thr Ala Thr Ala Ile Leu Ala Glu Tyr
                180                     185                     190
Phe Ala Lys Arg Arg Pro Lys Thr Ser Ile Val Gly Val Pro Lys Thr
        195                     200                     205
Ile Asp Gly Asp Leu Gln His Thr Phe Leu Asp Leu Thr Phe Gly Phe
    210                     215                     220
Asp Thr Ala Thr Lys Phe Tyr Ser Ser Ile Ile Ser Asn Ile Ser Arg
225                     230                     235                 240
Asp Ala Leu Ser Cys Lys Ala His Tyr His Phe Ile Lys Leu Met Gly
                245                     250                     255
Arg Ser Ala Ser His Ile Ala Leu Glu Cys Ala Leu Gln Thr His Pro
                260                     265                     270
Asn Ile Ala Leu Ile Gly Glu Glu Ile Ala Glu Lys Asn Leu Pro Leu
    275                     280                     285
Lys Thr Ile Ile His Lys Ile Cys Ser Val Ile Ala Asp Arg Ala Ala
    290                     295                     300
Met Glu Lys Tyr Tyr Gly Val Ile Leu Ile Pro Glu Gly Ile Ile Glu
305                     310                     315                 320
Phe Ile Pro Glu Ile Ile Asn Leu Ile Thr Glu Ile Glu Ser Leu Ser
                325                     330                     335
Glu Tyr Glu Asp Lys Ile Ser Arg Leu Ser Pro Glu Ser Gln Arg Leu
            340                     345                     350
Leu Lys Ser Phe Pro Ala Pro Ile Ile Glu Gln Ile Leu Asn Asp Arg
        355                     360                     365
Asp Ala His Gly Asn Val Tyr Val Ser Lys Ile Ser Val Asp Lys Leu
    370                     375                     380
Leu Ile His Leu Val Ser Asn His Leu Gln Gln Tyr Phe Pro Asn Val
385                     390                     395                 400
Pro Phe Asn Ala Ile Ser His Phe Leu Gly Tyr Glu Gly Arg Ser Gly
                405                     410                     415
Leu Pro Thr Lys Phe Asp Asn Thr Tyr Gly Tyr Ser Leu Gly Tyr Gly
            420                     425                     430
Ala Gly Ile Leu Val Arg Asn His Cys Asn Gly Tyr Leu Ser Thr Ile
            435                     440                     445
Glu Ser Leu Ala Cys Pro Phe Met Lys Trp Lys Leu Arg Ala Ile Pro
    450                     455                     460
Val Val Lys Met Phe Thr Val Lys Gln Gln Ala Asp Gly Thr Leu Gln
465                     470                     475                 480
Pro Lys Ile Lys Lys Tyr Leu Val Asp Ile Gly Ser Thr Ala Phe Arg
                485                     490                     495
Lys Phe Lys Leu Tyr Arg Lys Ile Trp Ala Leu Glu Asp Ser Tyr Arg
            500                     505                     510
Phe Leu Gly Pro Leu Gln Ile Glu Thr Pro Pro Glu Met His Ser Asp
        515                     520                     525
Asn Phe Pro Pro Leu Thr Leu Leu Leu Asn His Asn Phe Trp Gln Arg
    530                     535                     540
His Gln Gly Cys Ile Glu Ile Pro Asp Thr Thr Tyr
545                     550                     555
```

524

```
<210> 211
<211> 88
<212> PRT
<213> Chlamydia pneumoniae

<400> 211
Asn Ser Ser Asn Asn Ile Arg Leu Lys Met Glu Thr Tyr Ser Phe Ser
1               5                   10                  15
Thr Glu Leu Gln Lys Asn Thr Ser Leu Tyr Ile Met Glu Lys Leu Asp
            20                  25                  30
Ser Tyr Phe Ser Phe Gln Gly Lys Arg Thr Arg Val Ile Ala Ile Thr
        35                  40                  45
Pro Ala Gly Leu Ala Ile Ala Tyr Glu Gln Asn Ile His Leu Ser Met
    50                  55                  60
Thr Val Lys Ile Leu Lys Val Leu Ser Phe Pro Arg Ser Leu Leu Arg
65                  70                  75                  80
Thr Thr Ser Leu Trp Tyr Arg Pro
                85


<210> 212
<211> 340
<212> PRT
<213> Chlamydia pneumoniae

<400> 212
Tyr Gln Lys Leu Trp Glu Arg Glu Arg Glu Tyr Phe Lys Thr Ile Arg
1               5                   10                  15
Glu Lys Glu His Ala Thr Ile Ser Thr Met Leu Val Glu Leu Glu Ala
            20                  25                  30
Leu Lys Arg Glu Phe Ala His Leu Lys Asp Gln Lys Pro Thr Ser Asp
        35                  40                  45
Gln Glu Ile Thr Ser Leu Tyr Gln Cys Leu Asp His Leu Glu Phe Val
    50                  55                  60
Leu Leu Gly Leu Gly Gln Asp Lys Phe Leu Lys Ala Thr Glu Asp Glu
65                  70                  75                  80
Asp Val Leu Phe Glu Ser Gln Lys Ala Ile Asp Ala Trp Asn Ala Leu
                85                  90                  95
Leu Thr Lys Ala Arg Asp Val Leu Gly Leu Gly Asp Ile Gly Ala Ile
            100                 105                 110
Tyr Gln Thr Ile Glu Phe Leu Gly Ala Tyr Leu Ser Lys Val Asn Arg
        115                 120                 125
Arg Ala Phe Cys Ile Ala Ser Glu Ile His Phe Leu Lys Thr Ala Ile
    130                 135                 140
Arg Asp Leu Asn Ala Tyr Tyr Leu Leu Asp Phe Arg Trp Pro Leu Cys
145                 150                 155                 160
Lys Ile Glu Glu Phe Val Asp Trp Gly Asn Asp Cys Val Glu Ile Ala
                165                 170                 175
Lys Arg Lys Leu Cys Thr Phe Glu Lys Glu Thr Lys Glu Leu Asn Glu
            180                 185                 190
Ser Leu Leu Arg Glu Glu His Ala Met Glu Lys Cys Ser Ile Gln Asp
        195                 200                 205
Leu Gln Arg Lys Leu Ser Asp Ile Ile Ile Glu Leu His Asp Val Ser
    210                 215                 220
Leu Phe Cys Phe Ser Lys Thr Pro Ser Gln Glu Glu Tyr Gln Lys Asp
225                 230                 235                 240
Cys Leu Tyr Gln Ser Arg Leu Arg Tyr Leu Leu Leu Leu Tyr Glu Tyr
                245                 250                 255
Thr Leu Leu Cys Lys Thr Ser Thr Asp Phe Gln Glu Gln Ala Arg Ala
            260                 265                 270
Lys Glu Glu Phe Ile Arg Glu Lys Phe Ser Leu Leu Glu Leu Glu Lys
        275                 280                 285
```

Gly Ile Lys Gln Thr Lys Glu Leu Glu Phe Ala Ile Ala Lys Ser Lys
    290   295   300
Leu Glu Arg Gly Cys Leu Val Met Arg Lys Tyr Glu Ala Ala Ala Lys
305   310   315   320
His Ser Leu Asp Ser Met Phe Glu Glu Glu Thr Val Lys Ser Pro Arg
                325   330   335
Lys Asp Thr Glu
            340

        <210> 213
        <211> 101
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 213
Glu Cys Val Met Ser Tyr Pro Asp Ile Ser Asn Val Gln Ala Ser Ser
1   5   10   15
Ile Gln Ser Ala Leu Leu His Lys Thr Ser Asp Gln Ile Gln Gln Lys
            20   25   30
Arg Cys Phe Lys Gln Ser Thr Phe Val Ile Leu Ala Val Ser Leu Val
            35   40   45
Ile Ile Gly Ser Leu Phe Leu Leu Ala Gly Val Ala Ile Leu Thr Val
    50   55   60
Phe Ser His Gly Val Leu Ser Leu Val Phe Gly Val Leu Gly Ile Val
65   70   75   80
Leu Gly Leu Leu Leu Leu Ala Gly Gly Val Gly Leu Leu Val Glu Glu
                85   90   95
Ala Lys Ser Leu Leu
            100

        <210> 214
        <211> 398
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 214
Glu Leu Ser Tyr Gly Val Val Val Ser Ile Tyr Ser Glu Ile Leu Ser
1   5   10   15
Phe Ser Glu Leu Thr Ser Cys Lys His Ser Leu Phe Pro Phe Gly Pro
            20   25   30
Ile Glu Thr Ala Ser Ile Arg Ile His His Val Phe Asn Val Val Ile
            35   40   45
Val Cys Leu Ile Ile Leu Gly Thr Leu Phe Val Cys Leu Gly Met Val
    50   55   60
Phe Leu Gly Val Phe Ser Thr Tyr Leu Leu Gly Met Ser Ser Met Ile
65   70   75   80
Leu Gly Leu Leu Leu Ile Ser Ile Gly Leu Ala Leu Leu Lys Phe Lys
                85   90   95
Glu Arg Tyr Gly Leu Glu Pro Lys Glu Leu Phe Gly Val Glu Gly Gly
            100   105   110
Phe Asp Lys Lys Leu Pro Ser Glu Ile Ile Gln Met Gln Asp Gln Ile
            115   120   125
Ala Asp Leu Ala Arg Glu Leu Asp Leu Glu Gln Lys Lys Asp Thr Leu
    130   135   140
Ile Arg Gly Phe Ser Ala Arg Leu Asp Val Leu Glu Gly Ser Lys Thr
145   150   155   160
Glu Lys Lys Gln Ile Leu Lys Ile Gly Val Pro Arg Asn Leu Ser Glu
                165   170   175
Ile Gln Glu Arg Ala Gln Glu Gln Asn Ser Ile Leu Glu Gln Cys Lys
                180   185   190

```
Glu Ala Leu Leu Phe Arg Arg Lys Ser Ala Gln Glu Ile Phe Lys Lys
        195                 200                 205
Leu Tyr Asp Arg Lys Ala Ala Phe Trp Arg Ser Tyr Arg Glu Asp Leu
    210                 215                 220
Trp Cys Tyr Ser Glu Ile His Val Ser Lys Lys Ala Leu Ser Asn Leu
225                 230                 235                 240
Tyr Ile Gly Asp Val Phe Glu Gly Thr Ala Pro His Phe Leu Met Glu
                245                 250                 255
Ala Tyr Ala Met Cys Arg Thr Ala Lys Asn Leu Arg Asn Tyr Val Lys
                260                 265                 270
Val Cys Val Glu Asp Met Arg Val Asn Glu Glu Lys Lys Arg Ala Lys
                275                 280                 285
Gln Leu Ser Val Ser Glu Leu Leu Cys Cys Cys Thr Glu Ile Glu Thr
    290                 295                 300
Asp Leu Glu Asn Glu Thr Asn Leu Phe Thr Ser Asp Ser Glu Asp Val
305                 310                 315                 320
Leu Glu Glu Tyr Gln Ile His Cys Ile Arg Val Thr Met Leu His Ala
                325                 330                 335
Leu Trp Ala Ile Tyr Asn Asp Glu Val Val Ser Arg Lys Pro Ile Asp
                340                 345                 350
Thr Leu Asp Arg Val Arg Ala Arg Met Ala Val Glu Asp Cys Ile Glu
    355                 360                 365
Thr Phe Glu Glu Leu Gln Met Cys Val Val His Thr Lys Thr Leu Glu
370                 375                 380
Leu Glu Ile Ala Gln Leu Tyr Val Asp Ile Leu Leu Glu Ala
385                 390                 395
```

<210> 215
<211> 52
<212> PRT
<213> Chlamydia pneumoniae

<400> 215
```
Ile Leu Val Val Phe Ser Arg Val Ile Phe Ser Asn Thr Asn Gln Ile
1               5               10              15
Gly Ile Pro Arg Leu Glu Leu Ile Leu Pro Leu Trp Lys Lys Glu Asn
        20              25              30
Asp Pro Phe Cys Phe Leu Phe Ser Arg Val Glu Gly Thr Phe Ile Ile
        35              40              45
Leu Asn Ile Lys
    50
```

<210> 216
<211> 441
<212> PRT
<213> Chlamydia pneumoniae

<400> 216
```
Phe Leu Gly Leu Lys Glu Asp Tyr Glu Arg Pro Thr Tyr Cys Asn Ile
1               5               10              15
Pro Pro Ala Pro His Pro Gln Arg Val Asp Ser Lys Gly Cys Ile Ala
        20              25              30
Ser His Val Ser Thr Val Val Val Ala Leu Phe Ile Leu Gly Ile
        35              40              45
Phe Phe Leu Ser Gly Ser Leu Ala Phe Leu Val His Thr Ser Cys Gly
    50              55              60
Val Leu Leu Gly Ala Ala Leu Pro Ile Leu Cys Ile Gly Leu Val Leu
65              70              75              80
Leu Ala Val Ala Leu Ile Val Phe Leu Cys His Lys His Lys Thr Arg
                85              90              95
```

527

```
Gln Asp Leu Asp Tyr Tyr Asp Gln Asp Leu Asp Ser Leu Val Ile His
            100                 105                 110
Lys Lys Glu Ile Pro Asn Asp Ile Ser Glu Leu Arg Val Thr Phe Glu
        115                 120                 125
Lys Leu Gln Asn Leu Phe Gln Phe His Thr Lys Asp Phe Ser Asp Leu
    130                 135                 140
Ser Gln Glu Leu Gln Gly Lys Phe Ile Asn Cys Met Glu Lys Trp Leu
145                 150                 155                 160
Thr Leu Glu Asp Glu Val Thr Lys Phe Leu Ile Val Arg Asp Arg Phe
            165                 170                 175
Leu Glu Thr Arg Arg Asn Phe Thr Thr Phe Gly Glu Gln Val Lys Gly
        180                 185                 190
Ile Gln Ser Asn Ile Phe Asp Leu His Glu Glu Lys Ser Ser Leu Tyr
        195                 200                 205
Leu Glu Leu Tyr Arg Leu Arg Lys Asp Leu Gln Val Leu Leu Asn Phe
    210                 215                 220
Phe Leu Leu Pro Pro Gly Ile Leu Lys Val Asp Tyr Asp Glu Ile Glu
225                 230                 235                 240
Ala Ile Lys Gly Leu Phe Ile Arg Leu Thr Ser Arg Leu Asp Lys Leu
            245                 250                 255
Asp Val Lys Ala Gln Glu Arg Lys Lys Phe Ile Asn Glu Met Ser Arg
        260                 265                 270
Glu Phe Lys Glu Val Glu Lys Ala Phe Asp Ile Val Asp Arg Ala Thr
        275                 280                 285
Lys Lys Leu Met Asp Arg Ala Lys Lys Glu Ser Pro Ala Arg Leu Phe
    290                 295                 300
Met Gly Arg Thr Glu Ser Leu Leu Glu Met Lys Lys Asn Glu Glu Ala
305                 310                 315                 320
Leu Lys Asn Gln Gly Leu Asp Pro Glu Asn Leu Ser His Pro Glu Leu
            325                 330                 335
Phe Ser Pro Tyr Gln Gln Leu Leu Ile Leu Asn Tyr Leu Asn Ser Glu
            340                 345                 350
Ile Val Leu His His Tyr Glu Phe Leu Ile Ser Gly Thr Val Thr Ser
        355                 360                 365
Gly Leu Thr Leu Glu Glu Cys Glu Asn Arg Met Arg Ala Ala Ser Thr
    370                 375                 380
Gly Leu Asn Ala Leu Leu Val Arg Lys Leu Gln Phe Arg Gly Ala Ile
385                 390                 395                 400
Lys Ser Ala Tyr Phe Glu Lys Leu Thr Glu Ile Glu Lys Glu Leu Arg
            405                 410                 415
Ser Leu Gln Asp Val Ile Lys Ser Leu Glu Leu Glu Leu Ile His Lys
            420                 425                 430
Ile Lys Asp Ile Val Thr Glu Glu Thr
        435                 440
```

<210> 217
<211> 427
<212> PRT
<213> Chlamydia pneumoniae

<400> 217

```
Leu Thr Ser Ser Lys Lys Gln Val Met Ser Ser Ala Ile Ala Arg Asp
 1               5                   10                  15
Cys Phe Pro Ser Pro Ser Pro Gln Pro Ser Ser Thr Leu Gly Val His
            20                  25                  30
Pro Pro Lys Tyr Lys Ser Leu Ile Leu Ser Val Ser Leu Ile Val Leu
        35                  40                  45
Gly Val Leu Leu Leu Cys Val Gly Met Leu Leu Leu Val Asn Ala Ile
    50                  55                  60
Phe Ser Phe Ser Val Leu Thr Val Gly Leu Gly Gly Ala Gly Val Phe
65                  70                  75                  80
```

528

```
Leu Gly Ser Leu Leu Leu Ile Leu Gly Leu Ile Phe Phe Val Ser Tyr
            85                      90                      95
His Arg Lys Leu Ser Glu Ala Thr Arg Ser Leu Glu Gln Lys Ile Thr
           100                     105                 110
Leu Glu Tyr Gln Pro Trp Ala Asp Leu Arg Lys Glu Leu Asn Glu Val
           115                     120                 125
Gln Glu Trp Ser Asn Phe Leu Leu Asp Glu Trp Glu Asp Phe Lys Glu
       130                 135                 140
Val Val Ala Gln His Lys Ser Gln Phe Ala Thr Phe Glu Gly Asp Leu
145                 150                 155                     160
Leu Leu Phe Gly Arg Glu Val Glu Lys Tyr Glu Thr Ile Trp Lys Glu
               165                 170                 175
Leu Asp Gly Arg Asp Val Ala Leu Leu Thr Glu Leu Lys Asn Ile Trp
               180                 185                 190
Gly Pro Leu Glu Phe Leu Arg Lys Lys Gly Asp Arg Leu Gln Cys Glu
           195                 200                 205
Ile Asp Lys Leu Arg Lys Glu Val Met Lys Val Gly Lys Ser Gly Leu
       210                 215                 220
Lys Leu Ala Cys Glu Leu Thr Lys Phe Lys Ser Ala Leu Lys Asp Val
225                 230                 235                     240
Lys Ile Glu Gln Glu Cys Tyr Arg Asp Lys Arg Lys Val Glu Lys Leu
               245                 250                 255
Glu Val Phe Pro Glu Gly Tyr Arg Arg Glu Leu Leu Glu Val Leu Lys
           260                 265                 270
Thr Arg Leu Ser Val Glu Lys Glu Ile Gln Leu Phe Glu Glu Val Val
       275                 280                 285
Ser Ala Phe Glu Glu Lys Leu Ala Ser Leu His Arg Thr Val Phe Ser
    290                 295                 300
Glu Glu Glu Leu Gln Glu Ala Leu Asp Lys Ala Lys Ala Glu Leu Leu
305                 310                 315                     320
Asp Ile Gln Val Arg Lys Ser Val Val Glu Asp Leu Ser Cys Glu Pro
               325                 330                 335
Thr Leu Ile Gln Tyr His Leu Leu Arg Leu Tyr Glu Val Gln Cys Arg
           340                 345                 350
Ile Val Glu Gln Phe Leu Thr Gln Thr Phe Ser Ser Glu Gln Glu Lys
       355                 360                 365
Val Leu Glu Glu Tyr Glu Ala Leu Lys Ala Arg Ile Arg Lys Thr Leu
       370                 375                 380
Arg Val Lys Leu Asp Gln Val Arg Ala Asn Val Ala Phe Val Ala Ser
385                 390                 395                     400
Thr Thr Asp Leu Leu Ser Glu Ser Glu Ser Leu Asp Gly Asn Asp Ser
               405                 410                 415
Val Phe Glu Asp Ala His Asp Asp Phe Leu Asp
           420                 425

        <210> 218
        <211> 150
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 218
Asn Lys Ala Arg Thr Met Asn Pro Val Thr Phe Asp Arg Ile Gln Val
1                   5                   10                  15
Asp Phe Ile Pro Glu Asp Thr Ser Leu Arg Ile Asn Ser Tyr Ile Val
               20                  25                  30
Ala Gly Gly Leu Leu Ile Leu Gly Val Val Leu Ser Ile Leu Ser Val
           35                  40                  45
Ile Cys Leu Asp Ile Gly Leu Val Gly Leu Ser Ala Gly Ala Ala Phe
       50                  55                  60
Thr Leu Gly Leu Gly Cys Leu Ile Phe Ala Leu Phe Leu Phe Ser Phe
65                  70                  75                      80
```

529

```
Ser Leu Ile Leu Leu Leu Ser Gln Glu Lys Arg Val Pro Asp Val Leu
                85                    90                    95
Ser Leu Tyr Leu Glu Lys Glu Val Pro Gln Tyr Glu Thr Pro Leu Tyr
                100               105               110
Lys Glu Asp Leu Glu Ser Glu Arg Asp Met Ser Ala Ile Ser Glu Arg
                115               120               125
Leu Gly Ile Ile Glu Glu Lys Leu Arg Ile Ala Glu Lys Phe Arg Tyr
        130               135               140
Ser Asp Ser Val Phe Val
145               150


        <210> 219
        <211> 233
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 219
Pro Lys Cys Cys Lys Leu Lys Gly Phe Leu Ser Val Asn Glu Leu Ile
1               5               10                    15
Phe Gly Phe Gln Thr Phe Ser Val Val Val Leu Gly Val Phe Phe Ala
                20              25                    30
Ser Arg Gly Lys Ala Trp Leu Thr Gly Trp Leu Ser Leu Leu Ser Ser
        35                  40                  45
Ile Met Asn Val Phe Val Leu Lys Gln Ile His Leu Trp Gly Phe Glu
    50                  55                  60
Val Thr Ser Ala Asp Val Tyr Val Ile Gly Leu Leu Thr Cys Leu Asn
65                  70                  75                  80
Tyr Ala Arg Glu His Tyr Glu Lys Asn Asp Ile Asn Asp Ala Met Leu
                85                  90                  95
Cys Ser Trp Val Ile Ser Ile Ala Phe Leu Val Leu Thr Gln Leu His
                100             105             110
Leu Phe Leu Ile Pro Ser Pro Asn Asp Ser Ser Gln Glu His Phe Leu
        115             120             125
Ala Leu Phe Ser Ser Thr Pro Arg Ile Val Val Ala Ser Leu Val Thr
        130             135             140
Leu Ile Phe Val Gln Ile Val Asp Ile Lys Leu Phe Thr Phe Leu Gln
145             150             155             160
Arg Val Phe Ser Lys Lys Tyr Phe Ala Met Arg Ser Thr Ile Ser Leu
                165             170             175
Leu Phe Ser Gln Leu Ile Asp Thr Ile Ile Phe Ser Phe Leu Gly Leu
            180             185             190
Tyr Gly Leu Val Ser Asn Leu Cys Asp Val Met Ile Phe Ala Met Leu
        195             200             205
Val Lys Gly Ile Val Ile Thr Leu Ala Ile Pro Thr Leu Thr Val Thr
        210             215             220
Lys Ala Val Leu Asp Arg Arg Ser Ser
225             230


        <210> 220
        <211> 161
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 220
Ile Phe Leu Ser Lys Lys Val Phe Phe Glu Ser Tyr Glu Asp Phe Ala
1               5               10                    15
Asn Val Ala Ser Ser Trp Pro Lys Ser Leu Arg Ala Leu Val Gln Gly
                20              25                    30
Arg Tyr Phe Val Asp Ser Glu Leu Lys Glu Thr Pro Tyr Arg Ile His
        35                  40                  45
```

530

Asp Phe Lys Lys Thr Pro Ile His His Arg Leu Tyr Arg Ser Leu Pro
    50   55   60
Ile Ile Ser Thr Ile Gly Gly Ile Ile Arg Leu Ile Glu Ala His Ser
65   70   75   80
Gly Pro Ile His Pro Arg Asp Lys Met Lys Tyr Arg Phe Glu Val Leu
                85   90   95
Gln Ala Val Ile Glu Ile Leu Gly Leu Gly Val Leu Ile Leu Val Phe
                100   105   110
Asp Ile Ile Gly Cys Phe Leu Ala Phe Leu Val Ala Ile Ile Leu Ser
            115   120   125
Leu Leu Leu Tyr Cys Asn Ser Thr Phe Thr Cys Val Gln Asn Leu Ser
    130   135   140
Phe Thr Glu Arg Met Leu Glu Gly Ile Gly Glu Ala Val Asn Phe Leu
145   150   155   160
Ala

        <210> 221
        <211> 375
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 221
Gly Ser Ser Leu Ala Leu Lys Phe His Leu Ile His Gln Ser Lys Lys
1   5   10   15
Ser Gln Ala Arg Val Gly Gln Ile Glu Thr Ser His Gly Val Ile Asp
            20   25   30
Thr Pro Ala Phe Val Pro Val Ala Thr His Gly Ala Leu Lys Gly Val
        35   40   45
Ile Asp His Ser Asp Ile Pro Leu Leu Phe Cys Asn Thr Tyr His Leu
    50   55   60
Leu Leu His Pro Gly Pro Glu Ala Val Ala Lys Leu Gly Gly Leu His
65   70   75   80
Gln Phe Met Gly Arg Gln Ala Pro Ile Ile Thr Asp Ser Gly Gly Phe
                85   90   95
Gln Ile Phe Ser Leu Ala Tyr Gly Ser Val Ala Glu Glu Ile Lys Ser
            100   105   110
Cys Gly Lys Lys Lys Gly Met Ser Ser Leu Val Lys Ile Thr Asp Glu
    115   120   125
Gly Ala Trp Phe Lys Ser Tyr Arg Asp Gly Arg Lys Leu Phe Leu Ser
    130   135   140
Pro Glu Leu Ser Val Gln Ala Gln Lys Asp Leu Gly Ala Asp Ile Ile
145   150   155   160
Ile Pro Leu Asp Glu Leu Leu Pro Phe His Thr Asp Gln Glu Tyr Phe
                165   170   175
Leu Thr Ser Cys Ser Arg Thr Tyr Val Trp Glu Lys Arg Ser Leu Glu
            180   185   190
Tyr His Arg Lys Asp Pro Arg His Gln Ser Met Tyr Gly Val Ile His
        195   200   205
Gly Gly Leu Asp Pro Glu Gln Arg Arg Ile Gly Val Arg Phe Val Glu
    210   215   220
Asp Glu Pro Phe Asp Gly Ser Ala Ile Gly Gly Ser Leu Gly Arg Asn
225   230   235   240
Leu Gln Glu Met Ser Glu Val Val Lys Ile Thr Thr Ser Phe Leu Ser
                245   250   255
Lys Glu Arg Pro Val His Leu Leu Gly Ile Gly Asp Leu Pro Ser Ile
            260   265   270
Tyr Ala Met Val Gly Phe Gly Ile Asp Ser Phe Asp Ser Ser Tyr Pro
        275   280   285
Thr Lys Ala Ala Arg His Gly Leu Ile Leu Ser Lys Ala Gly Pro Ile
    290   295   300

```
Lys Ile Gly Gln Gln Lys Tyr Ser Gln Asp Ser Ser Thr Ile Asp Pro
305                 310                 315                 320
Ser Cys Ser Cys Leu Thr Cys Leu Ser Gly Ile Ser Arg Ala Tyr Leu
                325                 330                 335
Arg His Leu Phe Lys Val Arg Glu Pro Asn Ala Ala Ile Trp Ala Ser
                340                 345                 350
Ile His Asn Leu His His Met Gln Gln Val Met Lys Glu Ile Arg Glu
                355                 360                 365
Ala Ile Leu Lys Asp Glu Ile
                370                 375


        <210> 222
        <211> 193
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 222
Phe Tyr Ser Phe Leu Lys Lys Lys Gly Ile Phe Tyr Met Ser Lys Glu
1               5                   10                  15
Ser Ile Arg Ser Tyr Ser Glu Ile Ser Thr Pro Thr Pro Ile Phe Arg
                20                  25                  30
Glu Thr Pro Ser Lys Glu Gly Val Ala Tyr Lys Leu Gln Leu Arg Ser
                35                  40                  45
Pro Ala Lys Asp Cys Ile Leu Arg Asn Arg Val Ser Leu Lys Gly Ala
        50                  55                  60
Leu Leu Arg Ser Ile Pro Phe Tyr Gly Ser Phe Leu Gly Ala Lys Arg
65                  70                  75                  80
Ile His Ser Ala Trp Ser Ala Lys Asp Ala Pro Cys Thr Thr Arg Val
                85                  90                  95
Tyr His Tyr Leu Val Gly Gly Leu Glu Leu Leu Gly Leu Gly Val Val
                100                 105                 110
Val Leu Ala Cys Lys Val Leu Ala Thr Ala Leu Lys Phe Leu Phe Ser
        115                 120                 125
Lys Ala Ser Ser Lys Ile Lys Gln Met Lys Trp Arg Glu Lys Ala Arg
        130                 135                 140
Asn Leu Ala Ala Lys Asp Thr Val Gln Ser Ile Lys Glu Phe Cys Ser
145                 150                 155                 160
Val Asp Leu Thr Ser Cys Phe Thr Arg Cys Phe Arg Leu Arg Asn Arg
                165                 170                 175
Val Val Glu Glu Gly Ala Ser Glu Asn Gln Thr Val Arg Glu Ile Ile
                180                 185                 190
Val


        <210> 223
        <211> 148
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 223
Asp Ala Leu Arg Tyr Lys Tyr Glu Ile Gly Ile Gln Met Val Asn Arg
1               5                   10                  15
Tyr Lys Ser Ser Ala Glu Phe Ser Ala Asp His Tyr Tyr Asp Asp Asn
                20                  25                  30
Leu Val Arg Met Gly Tyr Lys Arg Asn Leu Arg Gly Leu Ala Pro Val
        35                  40                  45
Glu Asn Glu Val Cys Leu Phe Glu Glu Asn Asn Leu Leu Glu Ser Val
        50                  55                  60
Met Ala Ser Ile Pro Ile Met Gly Ser Ile Leu Gly Leu Gly Arg Leu
65                  70                  75                  80
```

532

```
His Ser Val Trp Ser Thr Gln Asp Pro Lys Asp Ser Lys Ile Ser Ile
            85                  90                  95
Ile Phe His Thr Ala Leu Gly Ile Leu Glu Thr Leu Gly Leu Gly Ile
            100                 105                 110
Ile Val Leu Leu Ile Lys Ile Thr Ile Thr Ile Leu Leu Ile Leu Phe
            115                 120                 125
Thr Pro Cys Leu Leu Cys Tyr Phe Met Tyr Ser Ala Ala Tyr Ser Asp
            130             135                 140
Phe His Pro Ile
145


        <210> 224
        <211> 123
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 224
Gly Glu Lys Phe Leu Lys Pro Trp Glu Lys Leu Arg Glu Leu Asn Ala
1                   5                   10                  15
Phe Glu Leu Thr Gln Pro Glu Glu Tyr Arg Asn Arg Trp Val Leu Met
            20                  25                  30
Pro Cys Leu Lys Cys Arg Phe Cys Arg Thr Gln His Ala Lys Val Trp
        35                  40                  45
Ser Tyr Arg Cys Val His Glu Ala Ser Leu Tyr Glu Lys Asn Cys Phe
        50              55                  60
Leu Thr Leu Thr Tyr Asp Asp Lys His Leu Pro Gln Tyr Gly Ser Leu
65                  70                  75                  80
Val Lys Leu His Leu Gln Leu Phe Leu Lys Arg Leu Arg Lys Met Ile
            85                  90                  95
Ser Pro His Lys Ile Arg Tyr Phe Glu Cys Gly Ala Tyr Gly Thr Lys
            100                 105                 110
Leu Gln Arg Pro His Tyr His Leu Leu Leu Ser
        115                 120


        <210> 225
        <211> 128
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 225
Ser Thr Met Leu Ile Gly Arg Tyr Ser Ser Asp Asp Gln Phe Thr Glu
1                   5                   10                  15
Ala Thr Lys Asn Thr Pro Thr Ile Ile Lys Leu Gly Phe Val Arg Asp
            20                  25                  30
Asn Leu Glu Gly Leu Thr Asn Pro Ile Ser Glu Ile Val Ser Glu Thr
            35                  40                  45
Ser Ser Ser Ile Lys Asp Ser Val Leu Arg Ser Leu Pro Ile Leu Gly
        50              55                  60
Ser Ile Leu Gly Cys Ala Arg Leu Tyr Ser Thr Leu Ser Thr Asn Asp
65                  70                  75                  80
Pro Leu Asp Glu Thr Gln Glu Lys Ile Trp His Thr Ile Phe Gly Ala
            85                  90                  95
Leu Glu Thr Leu Gly Leu Gly Ile Leu Ile Leu Leu Phe Lys Ile Ile
            100                 105                 110
Phe Val Ile Leu His Cys Ile Phe His Leu Val Ile Gly Phe Cys Lys
        115                 120                 125


        <210> 226
        <211> 91
        <212> PRT
        <213> Chlamydia pneumoniae


533
```

<400> 226

```
Tyr Thr Phe Lys Asn Pro Lys Lys Asn Lys Lys Met Lys Pro Asn Ser
1               5                   10                  15
Ile Ile Phe Leu Glu Asn Thr Lys His Tyr Pro Asp Ile Phe Arg Glu
            20                  25                  30
Gly Phe Val Arg Asp Arg His Gly Leu Met Glu Ala Ser Asp Trp Leu
        35                  40                  45
Leu Ser Thr Glu Ile Thr Ile Ile Arg Ser Ile Leu Gly Ala Ile Pro
        50                  55                  60
Ile Leu Gly Asn Ile Leu Gly Ala Gly Arg Leu Tyr Ser Val Trp Tyr
65                  70                  75                  80
Thr Ser Asp Glu Asp Trp Lys Lys Gln Val Val
                85                  90
```

<210> 227
<211> 232
<212> PRT
<213> Chlamydia pneumoniae

<400> 227

```
Asn Ser Phe Thr Ile Lys Phe Leu Leu Met Thr Lys Asn Ala Ile Asn
1               5                   10                  15
Ser Gln Thr Thr Thr Pro Gln Pro Asn Leu Thr Asp Ala Glu Pro Ile
            20                  25                  30
Ala Ser Arg Ala Gln Cys Lys Ser Ile Ala Val Ile Ile Ser Leu Phe
        35                  40                  45
Ala Leu Gly Met Leu Leu Leu Cys Leu Gly Ile Ile Leu Ile Ser Ile
        50                  55                  60
Pro Ile Pro Gly Leu Ala Ala Gln Val Ala Leu Gly Leu Gly Ile Val
65                  70                  75                  80
Ser Leu Ile Leu Gly Ile Ala Leu Ala Asn Ile Gly Phe Leu Cys Leu
                85                  90                  95
Leu Leu Arg Cys Lys Gln Val Pro Gln Lys Pro Asp Thr Leu Pro Ser
            100                 105                 110
Glu Ser Ser Lys Gln Pro Ser Glu Gly Ser Thr Pro Thr Ala Leu Pro
            115                 120                 125
Trp Gln Ala Gly Glu Phe Leu Glu Lys Val Gln Val Ser Ala Thr Pro
        130                 135                 140
Ile Leu Leu Pro Lys Asn Lys Asp Glu Glu Leu Ser Ala Lys Val Met
145                 150                 155                 160
Lys Glu Gly Ala Glu Ala Ala Ser Ser Ile Lys Gln Ala Val Leu Glu
                165                 170                 175
Ser Thr Glu Lys Leu Ile Asp Ala Arg Lys Gln Glu Glu Ser Arg Arg
            180                 185                 190
Glu Ala Arg Lys Lys Ile Val Ala Glu Glu Ala Glu Ala Ser Arg Lys
        195                 200                 205
Arg Ile Gln Gln Gln Met Ala Ala Asp Gln Glu Ala Leu Arg Lys Arg
    210                 215                 220
Lys Glu Glu Val Ala Lys Arg Lys
225                 230
```

<210> 228
<211> 141
<212> PRT
<213> Chlamydia pneumoniae

<400> 228

```
Ala Ile Phe Asn Arg Lys Arg Met Pro Tyr Tyr Ala Asn Thr Leu Glu
1               5                   10                  15
Phe Ile Gln Gly Thr Gln Ser Leu Cys Pro Leu Phe Lys Tyr Gly Phe
            20                  25                  30
```

534

Val Arg His His Tyr Lys Gly Gln Leu Glu Ile Glu Asp Ala Ser His
        35   40   45
Asp Trp Asp Phe Leu Glu Pro Pro Ser Thr Trp Lys Arg Thr Leu Leu
    50   55   60
Ala Ala Ile Pro Ile Leu Gly Ser Val Ile Gly Leu Gly Arg Leu Phe
65   70   75   80
Ser Ile Trp Ser Ile Arg Glu Pro Gln Asp Ser Gln Glu Tyr Lys Ser
                85   90   95
Ile Phe Trp His Thr Leu Cys Ala Val Leu Glu Ile Leu Gly Leu Gly
            100   105   110
Ile Val Ala Leu Ile Leu Lys Ile Leu Ala Thr Phe Ile Met Ala Met
        115   120   125
Pro Gly Leu Lys Arg Val Ala Thr Phe Leu Phe Tyr Ser
    130   135   140   .

        <210> 229
        <211> 153
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 229
Lys Glu Arg Phe Asn Ile Phe Val Ser Cys Lys Leu Leu Lys Glu Ile
1   5   10   15
Met Met Ile Asn Phe Ile Arg Ser Tyr Ala Leu Tyr Phe Ala Trp Ala
        20   25   30
Ile Ser Cys Ala Gly Thr Leu Ile Ser Ile Phe Tyr Ser Tyr Ile Leu
        35   40   45
Asn Val Glu Pro Cys Ile Leu Cys Tyr Tyr Gln Arg Ile Cys Leu Phe
    50   55   60
Pro Leu Thr Val Ile Leu Gly Ile Ser Ala Tyr Arg Glu Asp Ser Ser
65   70   75   80
Ile Lys Leu Tyr Ile Leu Pro Gln Ala Val Leu Gly Leu Gly Ile Ser
                85   90   95
Ile Tyr Gln Val Phe Leu Gln Glu Ile Pro Gly Met Gln Leu Asp Ile
            100   105   110
Cys Gly Arg Val Ser Cys Ser Thr Lys Ile Phe Leu Phe Ser Tyr Val
        115   120   125
Thr Ile Pro Met Ala Ser Val Val Ala Phe Gly Ala Ile Val Cys Leu
        130   135   140
Leu Val Leu Thr Lys Lys Tyr Arg Gly
145   150

        <210> 230
        <211> 277
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 230
Val Lys Asp Arg Ala Asp Phe Leu Asn Leu Lys Glu Lys Phe Ser Cys
1   5   10   15
Ser Ile Leu Lys Lys Glu Asn Ala Phe Glu Phe Tyr Val Phe Cys Ser
            20   25   30
Ile Lys Gln Leu Thr Asn Ser Ser Leu Arg Gly Pro Leu Asn Lys Lys
        35   40   45
Ile Leu Val Leu Cys Thr Ala Met Phe Phe Ile Val Cys Phe Gly Phe
    50   55   60
Leu Ile His Lys Lys His Thr Ile Leu Pro Pro Lys Ala His Ile Pro
65   70   75   80
Thr Asn Ala Lys His Phe Pro Thr Ile Gly Asn Pro Tyr Ala Pro Ile
                85   90   95

```
Asn Ile Thr Val Phe Glu Glu Pro Ser Cys Ser Ala Cys Ala Glu Phe
        100                 105                 110
Thr Thr Glu Val Phe Pro Leu Leu Lys Lys His Tyr Ile Asp Thr Gly
        115                 120                 125
Glu Ile Ser Phe Thr Leu Ile Pro Val Cys Phe Ile Arg Gly Ser Lys
        130                 135                 140
Pro Ala Ala Gln Ala Leu Leu Cys Ile Tyr His His Asp Pro Arg Gln
145                 150                 155                 160
Ala Asp Ile Asp Ala Tyr Met Glu Tyr Phe His Arg Ile Leu Thr Tyr
                165                 170                 175
Pro Lys Glu Glu Gly Ser His Trp Ala Thr Pro Glu Val Leu Thr Lys
                180                 185                 190
Leu Ala Glu Gly Leu Lys Ile Asn Ser Gly Arg Ser Val Asn Pro Lys
        195                 200                 205
Gly Leu Glu Gln Cys Ile Ala Ser Gly Gln Tyr Asn Glu Gln Ile Lys
        210                 215                 220
Lys Asn Asn Leu Tyr Gly Ser Gln Val Leu Gly Gly Gln Leu Ala Thr
225                 230                 235                 240
Pro Thr Ala Val Val Gly Asp Tyr Leu Ile Glu Asp Pro Thr Phe His
                245                 250                 255
Glu Ile Glu Arg Ala Ile Gln His Ile Arg Gln Leu Gln Ala Val Glu
        260                 265                 270
Gly Asp His Asp Asp
        275


        <210> 231
        <211> 466
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 231
Asn Ser Lys Ala Phe Ser Phe Leu Arg Ile Glu Gln Glu Asn Phe Ser
1                 5                   10                  15
Phe Lys Phe Lys Lys Ser Ala Leu Ser Phe Thr Tyr Asn Thr Ala Asn
        20                  25                  30
Leu Thr Lys Ser Thr Phe Thr Phe Ile Leu Leu Leu Leu Leu Arg Lys
        35                  40                  45
Lys Asp Gln Gly Leu Arg Phe Met Asp Lys Glu Thr Leu Glu Asn Ile
        50                  55                  60
Tyr Arg His Phe Arg Tyr Arg Phe Leu Lys Leu Asn Ile Leu Pro Ala
65                  70                  75                  80
Phe Leu Gly Leu Leu Leu Leu Cys Ser Pro Asn Thr Leu Asn Tyr Thr
                85                  90                  95
Gln Val Asp Val Ile Phe Ser Asp Arg Leu Cys Ser Cys Leu Leu Ile
                100                 105                 110
Phe Leu Ala Ile Ala Ser Leu Thr Lys Arg Ser Leu Leu Trp Leu Gly
        115                 120                 125
Ala Pro Leu Gly Ile Trp Val Thr Leu Phe Ala Cys Val Ala Gly Arg
        130                 135                 140
Ser Pro Thr Ile Phe Ala Asn Asp Thr Leu Ile Gly Phe Ala Ile Leu
145                 150                 155                 160
Ala Val Val Cys Ile Ser Pro Thr Arg Pro Glu Ala Leu Glu Val Gly
                165                 170                 175
Pro Thr Leu Pro Glu Gly Phe Ser Tyr Asn Pro Ser Ala Gly Gly Arg
                180                 185                 190
Arg Ala Ala Val Leu Phe Leu Ser Leu Leu Gly Trp Leu Glu Ala Arg
        195                 200                 205
Tyr Leu Thr Ala Ser Ser Leu Gly Ile Thr Ser Ser Gln Ser Ser Asn
        210                 215                 220
Phe Leu Leu Leu Tyr Ser Ser Ile Met Thr Val Tyr Ser Leu Leu Val
225                 230                 235                 240
```

536

```
Val Leu Ser Leu Ala Gly Ser Glu Arg Arg Trp His Thr Arg Pro Lys
            245                 250                 255
Ile Val Ile Ala Thr Ala Leu Ala Leu Thr Gly Val Ile Ile Leu Thr
            260                 265                 270
Leu Leu Pro Ile Ile Leu His Gln Leu Arg Tyr Asp Cys Trp Leu Cys
            275                 280                 285
Leu Cys Leu Thr Ile Glu Pro Ala Leu Ala Val Val Phe Ala Tyr Asp
    290                 295                 300
Glu Thr Arg Ala Thr Leu Arg Tyr Ile Ser Gln Phe Leu Gly Asp Lys
305                 310                 315                 320
Arg Ala Leu Thr Arg Ala Ser Phe Phe Gly Ser Glu Tyr Tyr Lys His
            325                 330                 335
Thr Leu Ser Trp Glu Glu Arg Thr Val Leu Pro Leu Arg Lys Ala Tyr
            340                 345                 350
Lys Gln Ala Phe Glu Gly Ile Ser Phe Pro Ile Asn Gln Leu Leu Ala
            355                 360                 365
Ile Leu Val Ala Thr Val Phe Val Lys Val Asn Ser Ser Met Gly Leu
    370                 375                 380
Pro Thr Phe Pro Arg Asn Phe Leu Asn Ile Cys Cys Trp Phe Ile Ile
385                 390                 395                 400
Val Leu Phe Ile Leu Ala Phe Ala Glu Ser Leu Arg His Leu Arg Trp
            405                 410                 415
Met Asn Leu Ile Phe Ser Ala Ala Ile Leu Phe Ser Pro Val Leu Phe
            420                 425                 430
His Ile Pro Val Glu Ser Pro Met Phe Leu Pro Ile Ile Val Thr Gly
    435                 440                 445
Leu Ile Leu Ile Ile Leu Ser Ile Gly Lys Arg Arg Arg Thr Lys Arg
    450                 455                 460
Lys Leu
465


        <210> 232
        <211> 234
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 232
Arg Phe Lys Lys Ala Leu Ile Tyr Met Ser Ser Gln Pro Leu Val Thr
1               5                   10                  15
Thr Ser Ser Ser Leu Ser Arg Tyr Val Val Leu Thr Gly Glu Glu Lys
            20                  25                  30
Val Ala Cys Tyr Lys Lys Ala Phe Asn His Ile Trp His Gly Ala Pro
            35                  40                  45
Ala Ile Ile Leu Ala Ala Ala Leu Leu Met Phe Cys Ile Phe Gly Phe
    50                  55                  60
Val Leu Gly Ser Ile Leu Leu Gly Ala Pro Leu Glu Gly Ala Ser Ile
65                  70                  75                  80
Leu Tyr Asp Val Ile Leu Pro Trp Leu Leu Pro Ser Ile Leu Val Phe
            85                  90                  95
Val Leu Leu Val Leu Pro Leu Asn Ile Tyr Ala Tyr Ser His His Lys
            100                 105                 110
Gln Val Leu Ala Leu His Glu Arg Ile Thr Gln Ser Asn Tyr Lys Glu
            115                 120                 125
Ile Tyr Asp His Cys Glu Lys Glu Lys Lys Thr Pro Asn Lys Lys Ala
    130                 135                 140
Leu Ser Leu Tyr Ile Glu Ser Gln Val Leu Val Pro Glu Tyr Ser Lys
145                 150                 155                 160
Arg Phe Ser Ser Met Ile Leu Gly Lys Thr Leu Lys Ile Ile Pro Lys
            165                 170                 175
Lys Asp Ser Pro Glu Ser Leu Lys His Asp Glu Leu Ile Gln Lys Ala
            180                 185                 190
```

```
Leu Glu Arg Ala Lys Glu Asn Ile Tyr Met Asn Lys Asn Gln Arg Glu
        195                 200                 205
Lys Arg Asp Glu Arg Glu Ala Lys Lys Glu Ala Lys Asn Ala Ser Lys
        210                 215                 220
Thr Asn Pro Leu Trp Glu Gly Leu Gly Thr
225                 230


        <210> 233
        <211> 248
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 233
Pro Gln Ala Phe Val Ser Ile Gln Asp Arg Gly Phe Ser Met Leu Gln
1                 5                   10                  15
Ala His Arg Leu Cys Tyr Ser Cys Asp Asn Gln Val Ile Leu Lys Asp
        20                  25                  30
Ala Ser Phe Gln Ala Ser Pro Gly Thr Ile Thr Ile Ile Leu Gly Ser
        35                  40                  45
Ser Gly Val Gly Lys Thr Thr Leu Phe Arg Leu Leu Ala Gly Phe Leu
    50                  55                  60
Pro Leu Gln Glu Gly Glu Leu Leu Trp Asn Gly Ser Pro Leu Asn Arg
65                  70                  75                  80
Lys Asp Val Ala Tyr Met Gln Gln Lys Glu Ala Leu Leu Pro Trp Arg
            85                  90                  95
Thr Ala Leu Lys Asn Met Thr Leu Ser Thr Glu Leu Gly Ile Asn Thr
        100                 105                 110
Ser His Asn Ala Leu Ser Asn Glu Arg Leu Glu Glu Ile Ile His Asn
        115                 120                 125
Phe Asp Leu Gly Gln Leu Leu Asp Arg Tyr Pro Asp Glu Leu Ser Gly
    130                 135                 140
Gly Gln Arg Gln Arg Ile Ala Leu Ala Ala Gln Cys Leu Ser Leu Lys
145                 150                 155                 160
Pro Ile Leu Leu Leu Asp Glu Pro Phe Ser Ser Leu Asp Val Leu Leu
            165                 170                 175
Lys Glu Gln Leu Tyr Gln Asp Ile Val Ala Leu Ala Lys Lys Glu Asn
        180                 185                 190
Lys Thr Val Leu Leu Val Thr His Asp Phe His Asp Val Ser Cys Leu
        195                 200                 205
Gly Asp Val Leu Tyr Val Ile Lys Asn Lys Thr Leu Thr Pro Val Pro
    210                 215                 220
Leu Asp Pro Ser Met Arg Pro Leu Asn Asn Gly Leu Cys Phe Ile Lys
225                 230                 235                 240
Asp Leu Lys Lys His Leu Tyr Thr
            245


        <210> 234
        <211> 301
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 234
Lys Lys Phe Leu Met Arg Arg Phe Leu Phe Leu Ile Leu Ser Ser Leu
1                 5                   10                  15
Pro Leu Val Ala Phe Ser Ala Asp Asn Phe Thr Ile Leu Glu Glu Lys
        20                  25                  30
Gln Ser Pro Leu Ser Arg Val Ser Ile Ile Phe Ala Leu Pro Gly Val
        35                  40                  45
Thr Pro Val Ser Phe Asp Gly Asn Cys Pro Ile Pro Trp Phe Ser His
    50                  55                  60
```

538

Ser Lys Lys Thr Leu Glu Gly Gln Arg Ile Tyr Tyr Ser Gly Asp Ser
65   70   75   80
Phe Gly Lys Tyr Phe Val Val Ser Ala Leu Trp Pro Asn Lys Val Ser
                85   90   95
Ser Ala Val Val Ala Cys Asn Met Ile Leu Lys His Arg Val Asp Leu
            100   105   110
Ile Leu Ile Ile Gly Ser Cys Tyr Ser Arg Ser Gln Asp Ser Arg Phe
        115   120   125
Gly Ser Val Leu Val Ser Lys Gly Tyr Ile Asn Tyr Asp Ala Asp Val
    130   135   140
Arg Pro Phe Phe Glu Arg Phe Glu Ile Pro Asp Ile Lys Lys Ser Val
145   150   155   160
Phe Ala Thr Ser Glu Val His Arg Glu Ala Ile Leu Arg Gly Gly Glu
                165   170   175
Glu Phe Ile Ser Thr His Lys Gln Glu Ile Glu Glu Leu Leu Lys Thr
            180   185   190
His Gly Tyr Leu Lys Ser Thr Thr Lys Thr Glu His Thr Leu Met Glu
        195   200   205
Gly Leu Val Ala Thr Gly Glu Ser Phe Ala Met Ser Arg Asn Tyr Phe
    210   215   220
Leu Ser Leu Gln Lys Leu Tyr Pro Glu Ile His Gly Phe Asp Ser Val
225   230   235   240
Ser Gly Ala Val Ser Gln Val Cys Tyr Glu Tyr Ser Ile Pro Cys Leu
                245   250   255
Gly Val Asn Ile Leu Leu Pro His Pro Leu Glu Ser Arg Ser Asn Glu
            260   265   270
Asp Trp Lys His Leu Gln Ser Glu Ala Ser Lys Ile Tyr Met Asp Thr
        275   280   285
Leu Leu Lys Ser Val Leu Lys Glu Leu Cys Ser Ser His
    290   295   300

        <210> 235
        <211> 64
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 235
Glu Lys Ala Arg Thr Met Phe Leu Gly Lys Val Leu Leu Phe Leu Leu
1   5   10   15
Arg Ile Ser Arg Arg Ser Tyr Val Gln Glu Ile Gly Ile Phe Phe His
                20   25   30
Leu Glu Thr Pro Asp Leu Lys Ile Val Leu Cys Ala Phe Val Ser Thr
        35   40   45
Phe Ile Val Val Glu Met Asp Val Ser Leu Lys Asn Lys Gly Gln Ser
    50   55   60

        <210> 236
        <211> 233
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 236
Phe Ile Met Leu Gln Ser Cys Lys Lys Ala Leu Leu Ser Ile Val Val
1   5   10   15
Ser Ile Leu Ala Phe His Pro Ile Pro Gly Met Gly Val Glu Ala Lys
                20   25   30
Ser Gly Phe Leu Gly Lys Val Lys Gly Trp Phe Ser Lys Lys Glu Ile
        35   40   45
Gln Glu Glu Ala Arg Ile Leu Pro Val Lys Asp Ser Leu Ser Trp Lys
    50   55   60

539

```
Arg Tyr Asp Tyr Thr Ser Ser Ser Gly Phe Ser Val Glu Phe Pro Gly
65                  70                  75                  80
Glu Pro Asp His Ser Gly Gln Ile Val Glu Val Pro Gln Ser Glu Ile
                85                  90                  95
Thr Ile Arg Tyr Asp Thr Tyr Val Thr Glu Thr His Pro Asp Asn Thr
            100                 105                 110
Val Tyr Val Val Ser Val Trp Glu Tyr Pro Glu Lys Val Asp Ile Ser
            115         ·       120                 125
Arg Pro Glu Leu Asn Leu Gln Glu Gly Phe Ser Gly Met Met Gln Ala
        130             135             140
Leu Pro Glu Ser Gln Val Leu Phe Met Gln Ala Arg Gln Ile Gln Gly
145             150                 155                 160
His Lys Ala Leu Glu Phe Trp Ile Val Cys Glu Asp Val Tyr Phe Arg
            165                 170                 175
Gly Met Leu Ile Ser Val Asn His Thr Leu Tyr Gln Val Phe Met Val
            180                 185                 190
Tyr Lys Asn Lys Asn Pro Gln Ala Leu Asp Lys Glu Tyr Glu Ala Phe
        195                 200                 205
Ser Gln Ser Phe Lys Ile Thr Lys Ile Arg Glu Pro Arg Thr Ile Pro
    210                 215                 220
Ser Ser Val Lys Lys Lys Val Ser Leu
225             230
```

        <210> 237
        <211> 261
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 237

```
Val Phe Val Arg Tyr Leu Leu Met Lys Pro Glu Glu Ser Glu Cys Leu
1               5                   10                  15
Cys Ile Gly Val Leu Pro Ala Arg Trp Asn Ser Ser Arg Tyr Pro Gly
            20                  25                  30
Lys Pro Leu Ala Lys Ile His Gly Lys Ser Leu Ile Gln Arg Thr Tyr
        35                  40                  45
Glu Asn Ala Ser Gln Ser Ser Leu Leu Asp Lys Ile Val Val Ala Thr
    50                  55                  60
Asp Asp Gln His Ile Ile Asp His Val Thr Asp Phe Gly Gly Tyr Ala
65          ·       70                  75                  80
Val Met Thr Ser Pro Thr Cys Ser Asn Gly Thr Glu Arg Thr Gly Glu
            85                  90                  95
Val Ala Arg Lys Tyr Phe Pro Lys Ala Glu Ile Ile Val Asn Ile Gln
        100                 105                 110
Gly Asp Glu Pro Cys Leu Asn Ser Glu Val Val Asp Ala Leu Val Gln
    115                 120                 125
Lys Leu Arg Ser Ser Pro Glu Ala Glu Leu Val Thr Pro Val Ala Leu
    130             135             140
Thr Thr Asp Arg Glu Glu Ile Leu Thr Glu Lys Lys Val Lys Cys Val
145             150                 155         ·       160
Phe Asp Ser Glu Gly Arg Ala Leu Tyr Phe Ser Arg Ser Pro Ile Pro
            165                 170                 175
Phe Ile Leu Lys Lys Ala Thr Pro Val Tyr Leu His Ile Gly Val Tyr
            180                 185                 190
Ala Phe Lys Arg Glu Ala Leu Phe Arg Tyr Leu Gln His Ser Ser Thr
        195                 200                 205
Pro Leu Ser Asp Ala Glu Asp Leu Glu Gln Leu Arg Phe Leu Glu His
    210                 215                 220
Gly Gly Lys Ile His Val Cys Ile Val Asp Ala Lys Ser Pro Ser Val
225             230                 235                 240
Asp Tyr Pro Glu Asp Ile Ala Lys Val Glu Gln Tyr Ile Thr Cys Leu
            245                 250                 255
```

540

Ser Asn Ala Tyr Phe
                260

            <210> 238
            <211> 543
            <212> PRT
            <213> Chlamydia pneumoniae

            <400> 238
Ser Arg Thr Ile Tyr His Met Pro Phe Lys Cys Ile Phe Leu Thr Gly
 1   5   10   15
Gly Val Val Ser Ser Leu Gly Lys Gly Leu Thr Ala Ala Ser Leu Ala
                20   25   30
Leu Ile Leu Glu Arg Gln Arg Leu Asn Val Ala Met Leu Lys Leu Asp
            35   40   45
Pro Tyr Leu Asn Val Asp Pro Gly Thr Met Asn Pro Phe Glu His Gly
    50   55   60
Glu Ile Tyr Val Thr Asp Asp Gly Val Glu Thr Asp Leu Asp Leu Gly
65   70   75   80
His Tyr His Arg Phe Ser Ser Ala Ala Leu Ser Arg His Ser Ser Ala
                85   90   95
Thr Ser Gly Gln Ile Tyr Ala Arg Val Ile Lys Arg Glu Arg Glu Gly
                100   105   110
Asp Tyr Leu Gly Ser Thr Val Gln Val Ile Pro His Ile Thr Asn Glu
            115   120   125
Ile Ile Gln Val Ile Leu Asp Ala Ala Lys Glu His Ser Pro Asp Val
            130   135   140
Leu Ile Val Glu Ile Gly Gly Thr Ile Gly Asp Ile Glu Ser Leu Pro
145   150   155   160
Phe Leu Glu Ala Ile Arg Gln Phe Arg Tyr Asp His Ser Glu Asp Cys
                165   170   175
Leu Asn Ile His Met Thr Tyr Val Pro Tyr Leu Gln Ala Ala Asp Glu
            180   185   190
Val Lys Ser Lys Pro Thr Gln His Ser Val Gln Thr Leu Arg Gly Ile
            195   200   205
Gly Ile Ile Pro Asp Ala Ile Leu Cys Arg Ser Glu Lys Pro Leu Thr
            210   215   220
Gln Glu Val Lys Ser Lys Ile Ser Leu Phe Cys Asn Val Pro Asn Arg
225   230   235   240
Ala Val Phe Asn Val Ile Asp Val Lys His Thr Ile Tyr Glu Met Pro
                245   250   255
Leu Met Leu Ala Gln Glu Lys Ile Ala Asn Phe Ile Gly Glu Lys Leu
            260   265   270
Lys Leu Ala Thr Val Pro Glu Asn Leu Asp Asp Trp Lys Val Leu Val
            275   280   285
Asn Gln Leu Ser Gln Asp Leu Pro Lys Val Lys Ile Gly Val Val Gly
    290   295   300
Lys Tyr Val Gln His Arg Asp Ala Tyr Lys Ser Ile Phe Glu Ala Leu
305   310   315   320
Thr His Ala Ala Leu Arg Leu Gly His Ala Ala Glu Ile Ile Pro Ile
            325   330   335
Asp Ala Glu Asp Glu Asn Leu Thr Met Glu Leu Ser Gln Cys Asp Ala
        -340   345   350
Cys Leu Val Pro Gly Gly Phe Gly Val Arg Gly Trp Glu Gly Lys Ile
            355   360   365
Ala Ala Ala Lys Phe Cys Arg Glu Gln Gly Ile Pro Tyr Phe Gly Ile
    370   375   380
Cys Leu Gly Met Gln Val Leu Val Val Glu Tyr Ala Arg Asn Val Leu
385   390   395   400
Asn Leu Asp Gln Ala Asn Ser Leu Glu Met Asp Pro Asn Thr Pro His
                405   410   415

                                541

```
Pro Ile Val Tyr Val Met Glu Gly Gln Asp Pro Leu Val Ala Thr Gly
        420                 425                 430
Gly Thr Met Arg Leu Gly Ala Tyr Pro Cys Leu Leu Lys Pro Gly Ser
        435                 440                 445
Lys Ala His Lys Ala Tyr Asn Glu Ser Ser Leu Ile Gln Glu Arg His
    450                 455                 460
Arg His Arg Tyr Glu Val Asn Pro Asp Tyr Ile Gln Ser Leu Glu Asp
465                 470                 475                 480
His Gly Leu Arg Ile Val Gly Thr Cys Pro Pro Gln Gly Leu Cys Glu
            485                 490                 495
Ile Ile Glu Val Ser Asp His Pro Trp Met Ile Gly Val Gln Phe His
            500                 505                 510
Pro Glu Phe Val Ser Lys Leu Ile Ser Pro His Pro Leu Phe Ile Ala
        515                 520                 525
Phe Ile Glu Ala Ala Leu Val Tyr Ser Lys Asp Ala Ser His Val
    530                 535                 540
```

        <210> 239
        <211> 158
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 239
```
Ser Ile Leu Arg Met Gln Ala Met Ser Lys Pro Ser Ser Cys Lys Ala
1                   5                   10                  15
Tyr Leu Gly Ile Asp Tyr Gly Lys Lys Arg Ile Gly Leu Ala Tyr Ala
            20                  25                  30
Ala Glu Pro Leu Leu Leu Thr Leu Pro Ile Gly Asn Ile Glu Ala Gly
        35                  40                  45
Lys Asn Leu Lys Leu Ser Ala Glu Ala Leu His Lys Ile Ile Leu Ser
    50                  55                  60
Arg Asn Ile Thr Cys Val Val Leu Gly Asn Pro Leu Pro Met Gln Lys
65                  70                  75                  80
Gly Leu Tyr Ser Ser Leu Gln Glu Glu Val Ser Leu Leu Ala Glu Glu
            85                  90                  95
Leu Lys Lys Leu Ser Thr Val Glu Ile Ile Leu Trp Asp Glu Arg Leu
            100                 105                 110
Ser Ser Val Gln Ala Glu Arg Met Leu Lys Gln Asp Cys Gly Leu Ser
        115                 120                 125
Arg Lys Asp Arg Lys Gly Lys Thr Asp Ser Leu Ala Ala Thr Leu Ile
    130                 135                 140
Leu Thr Ser Phe Leu Asp Ser Leu Pro Lys Lys Leu Thr Leu
145                 150                 155
```

        <210> 240
        <211> 543
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 240
```
Pro Cys Asn His Gln Lys Leu Arg Asp Phe Asn Phe Arg Asn Phe Leu
1                   5                   10                  15
Leu Phe Val Ile Phe Ala Ser Ala Gly Thr Lys Lys Glu Ile Lys Met
            20                  25                  30
Thr Asn Val Val Gln Glu Thr Ile Gly Gly Leu Asn Ser Pro Arg Thr
            35                  40                  45
Cys Pro Pro Cys Ile Leu Val Ile Phe Gly Ala Thr Gly Asp Leu Thr
    50                  55                  60
Ala Arg Lys Leu Leu Pro Ala Leu Tyr His Leu Thr Lys Glu Gly Arg
65                  70                  75                  80
```

```
Leu Ser Asp Gln Phe Val Cys Val Gly Phe Ala Arg Arg Glu Lys Ser
             85                  90                  95
Asn Glu Leu Phe Arg Gln Glu Met Lys Gln Ala Val Ile Gln Phe Ser
            100                 105                 110
Pro Ser Glu Leu Asp Ile Lys Val Trp Glu Asp Phe Gln Gln Arg Leu
            115                 120                 125
Phe Tyr His Arg Ser Glu Phe Asp Asn Asn Met Gly Tyr Thr Ser Leu
        130                 135                 140
Lys Asp Ser Leu Glu Asp Leu Asp Lys Thr Tyr Gly Thr Arg Gly Asn
145                 150                 155                 160
Arg Leu Phe Tyr Leu Ser Thr Pro Pro Gln Tyr Phe Ser Arg Ile Ile
            165                 170                 175
Glu Asn Leu Asn Lys His Lys Leu Phe Tyr Lys Asn Gln Asp Gln Gly
            180                 185                 190
Lys Pro Trp Ser Arg Val Ile Ile Glu Lys Pro Phe Gly Arg Asp Leu
            195                 200                 205
Asp Ser Ala Lys Gln Leu Gln Gln Cys Ile Asn Glu Asn Leu Asn Glu
        210                 215                 220
Asn Ser Val Tyr His Ile Asp His Tyr Leu Gly Lys Glu Thr Val Gln
225                 230                 235                 240
Asn Ile Leu Thr Thr Arg Phe Ala Asn Thr Ile Phe Glu Ser Cys Trp
            245                 250                 255
Asn Ser Gln Tyr Ile Asp His Val Gln Ile Ser Leu Ser Glu Thr Ile
            260                 265                 270
Gly Ile Gly Ser Arg Gly Asn Phe Phe Glu Lys Ser Gly Met Leu Arg
            275                 280                 285
Asp Met Val Gln Asn His Met Met Gln Leu Leu Cys Leu Leu Thr Met
        290                 295                 300
Glu Pro Pro Thr Thr Phe Asp Ala Asp Glu Ile Arg Lys Glu Lys Ile
305                 310                 315                 320
Lys Ile Leu Gln Arg Ile Ser Pro Phe Ser Glu Gly Ser Ser Ile Val
            325                 330                 335
Arg Gly Gln Tyr Gly Pro Gly Thr Val Gln Gly Val Ser Val Leu Gly
            340                 345                 350
Tyr Arg Glu Glu Glu Asn Val Asp Lys Asp Ser Arg Val Glu Thr Tyr
            355                 360                 365
Val Ala Leu Lys Thr Val Ile Asn Asn Pro Arg Trp Leu Gly Val Pro
        370                 375                 380
Phe Tyr Leu Arg Ala Gly Lys Arg Leu Ala Lys Lys Ser Thr Asp Ile
385                 390                 395                 400
Ser Ile Ile Phe Lys Lys Ser Pro Tyr Asn Leu Phe Ala Ala Glu Glu
            405                 410                 415
Cys Ser Arg Cys Pro Ile Glu Asn Asp Leu Leu Ile Ile Arg Ile Gln
            420                 425                 430
Pro Asp Glu Gly Val Ala Leu Lys Phe Asn Cys Lys Val Pro Gly Thr
            435                 440                 445
Asn Asn Ile Val Arg Pro Val Lys Met Asp Phe Arg Tyr Asp Ser Tyr
        450                 455                 460
Phe Gln Thr Thr Thr Pro Glu Ala Tyr Glu Arg Leu Leu Cys Asp Cys
465                 470                 475                 480
Ile Ile Gly Asp Arg Thr Leu Phe Thr Gly Gly Asp Glu Val Met Ala
            485                 490                 495
Ser Trp Lys Leu Phe Thr Pro Val Leu Glu Glu Trp Asp Gln Asp Ser
            500                 505                 510
Ser Pro Ser Phe Pro Asn Tyr Pro Ala Gly Ser Ser Gly Pro Lys Glu
            515                 520                 525
Ala Asp Ala Leu Ile Glu Arg Asp Gly Arg Ser Trp Arg Pro Leu
        530                 535                 540
```

<210> 241
<211> 270
<212> PRT
<213> Chlamydia pneumoniae

<400> 241
Lys Ser Ile Ser Met Thr Asn Ile Gly Ile Glu Thr Met Ala Thr Leu
1   5   10   15
Ile Asn Phe Asn Asp Thr Asn Lys Leu Leu Leu Thr Lys Gln Pro Ser
            20   25   30
Leu Phe Ile Asp Leu Ala Ser Lys Asp Trp Ile Ala Ser Ala Asn Gln
        35   40   45
Ala Ile Lys Gln Arg Gly Ala Phe Tyr Val Ala Leu Ser Gly Gly Lys
    50   55   60
Thr Pro Leu Glu Ile Tyr Lys Asp Ile Val Ile Asn Lys Asp Lys Leu
65   70   75   80
Ile Asp Pro Ser Lys Ile Phe Leu Phe Trp Gly Asp Glu Arg Leu Ala
                85   90   95
Pro Ile Thr Ser Ser Glu Ser Asn Tyr Gly Gln Ala Met Ser Ile Leu
            100   105   110
Arg Asp Leu Asn Ile Pro Asp Glu Gln Ile Phe Arg Met Glu Thr Glu
            115   120   125
Asn Pro Asp Gly Ala Lys Lys Tyr Gln Glu Leu Ile Glu Asn Lys Ile
    130   135   140
Pro Asp Ala Ser Phe Asp Met Ile Met Leu Gly Leu Gly Glu Asp Gly
145   150   155   160
His Thr Leu Ser Leu Phe Ser Asn Thr Ser Ala Leu Glu Glu Glu Asn
            165   170   175
Asp Leu Val Val Phe Asn Ser Val Pro His Leu Glu Thr Glu Arg Met
            180   185   190
Thr Leu Thr Phe Pro Cys Val His Lys Gly Lys His Val Val Val Tyr
        195   200   205
Val Gln Gly Glu Asn Lys Lys Pro Ile Leu Lys Ser Val Phe Phe Ser
    210   215   220
Glu Gly Arg Glu Glu Lys Leu Tyr Pro Ile Glu Arg Val Gly Arg Asp
225   230   235   240
Arg Ser Pro Leu Phe Trp Ile Ile Ser Pro Glu Ser Tyr Asp Ile Ala
            245   250   255
Asp Phe Asp Asn Ile Ser Ser Ile Tyr Lys Met Asp Ile Leu
            260   265   270

<210> 242
<211> 388
<212> PRT
<213> Chlamydia pneumoniae

<400> 242
Leu Val Tyr Phe Met Val Phe Ser Pro Ser Ser Glu Ser Val Val Lys
1   5   10   15
Ala Asn Ser Val Val Arg Ser Asn Phe Cys Tyr Phe Leu Glu Asn Lys
            20   25   30
Phe Val Ser Pro Ser Glu Ser Thr Glu Val Met Phe Ser Glu Ile Met
        35   40   45
Lys Gly Arg Val Pro Asp Ile Glu Ser Leu Phe Asp Arg Pro Thr Asp
    50   55   60
Met Met Met Thr Gly Phe Lys Ala Ala Gln Asn Leu Gly Asn Leu Phe
65   70   75   80
Asn Ser Phe Gly Ile Leu Ile Met Cys Phe Ser Gln Cys Lys Ser Cys
            85   90   95
Gln Thr Pro Glu Lys Glu Thr Ser Ala Ile Val Leu Gly Ala Thr Leu
            100   105   110

Leu Phe Phe Val Val Ala Leu Ile Leu Gly Pro Thr Leu Gly Ala Leu
        115   120   125
Val Tyr Cys Ala Tyr Lys Val Tyr Thr Leu Gly Lys Met Ile Tyr Ser
        130   135   140
Leu Asn Lys Ala Lys Ala Lys Val Leu Arg His Pro Ala Gln Asn Val
145   150   155   160
Phe His Arg Ala Ala Gly Val Ala Thr Ile Arg Ser Ser Glu Glu Ala
                165   170   175
Val Lys Ala Cys Lys Leu Tyr Lys Ser Ala Met Ile Gly Ser Leu Val
                180   185   190
Val Ser Leu Ile Ala Ser Leu Ala Leu Ile Ala Leu Thr Ala Gly Ile
        195   200   205
Val Leu Val Leu Phe Phe Val Ala Pro Gly Ala Ala Pro Val Ile Thr
        210   215   220
Ala Ala Met Met Gly Cys Cys Ala Ala Gly Gly Gly Ala Leu Leu Ile
225   230   235   240
Ser Leu Leu Gly Leu Trp Ile Ala Ile Val Arg Lys Ala Lys His Gln
                245   250   255
Glu Ala Cys Val Gly His Leu Thr Asn Val Val Leu His Thr Ala Val
                260   265   270
Ser Glu Ala Leu Leu His Asp Pro Ser His Phe Gln Thr Asn Ala Leu
        275   280   285
Ala Arg Asp Leu Phe Leu Thr Asp Cys Leu Ser His Tyr Gly His Leu
        290   295   300
Phe Ser Asn Glu Glu Val Ala Gln Leu Val Gln Gly Gly Ala Pro Gly
305   310   315   320
Gly Gly Ser Arg Pro Ser Gln His Tyr Gly Gly Ser Ser Asp Tyr Gln
                325   330   335
Asn Arg Arg Gly Gly Asn Gly Asn Phe Gly Gly Ser His Phe Gly Gly
        340   345   350
Gly Gly Gly Phe Ala Gly Ser His Phe Gly Ala Gly Tyr Pro Thr Ala
        355   360   365
Pro Thr Met Pro Ser Ala Pro Pro Phe Pro Pro Pro Ala Tyr Asp
370   375   380
Thr Ile Tyr Gly
385

        <210> 243
        <211> 390
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 243
Ile Phe Leu Val Lys Phe Met Ser Ala Met Ile Ser Leu Ser Ser Ser
1   5   10   15
His Glu Ala Ser Ile Ala Ser Asn Thr Gln Val Arg Asp Val Leu Val
        20   25   30
Ser Leu Ala Met Asp Glu Phe Val Glu His Asn Thr Glu Ile Leu Pro
        35   40   45
Ile Lys Val Phe Leu Ala Arg Gly Thr Leu Ser Ser Thr Ala Ile Ile
        50   55   60
Asp Asp Leu Lys Asp Val Val Glu Thr Glu Gly Glu His His Phe Gln
65   70   75   80
Val Tyr Ser Asn Ile Ser Leu Lys Met Ile Tyr Gln Arg Phe Phe Glu
                85   90   95
Lys Ile Phe Gly Ile Gly Cys Cys Pro Leu Leu Leu Val Thr Asp Ser
        100   105   110
His His Thr Asp Pro Cys Gly Ala Leu Ile Thr Gly Ile Phe Ala Ala
        115   120   125
Val Leu Phe Thr Val Leu Ala Ile Val Phe Gly Pro Thr Leu Gly Ile
130   135   140

545

Leu Cys Tyr Ser Ala Tyr Lys Ile Tyr Gln Leu Thr Lys Lys Ile Ser
145   150   155   160
Ser Leu Ser Arg Thr His Thr Glu Val Ile Asn Ser Val Gln Lys Ser
                165   170   175
Asp Pro Phe Ile His Arg Ser Gly Ala Val Ala Ala Ala Ala Ala Ser
            180   185   190
Gln Ser Thr Ile Lys Ala Cys Lys Val Phe Arg Gln Ser Thr Leu Ile
            195   200   205
Phe Phe Val Leu Gly Leu Ile Ile Thr Ile Ser Leu Ala Ala Leu Ile
        210   215   220
Val Gly Leu Val Phe Ala Leu Phe Phe Leu Asp Pro Gly Ala Pro Ala
225   230   235   240
Val Met Thr Ala Ala Met Ile Gly Cys Cys Ala Ala Gly Gly Thr Gly
                245   250   255
Ile Leu Leu Ser Val Ile Gly Phe Leu Leu Ala Ser Val Tyr Ser Val
                260   265   270
Gln Lys Ser Gln Glu Gly Val His His Met His Thr Ala Leu Leu Arg
            275   280   285
Cys Ile Val Ser Asn Thr Ile Ile Gln Met Pro Tyr Leu Pro Ile Thr
        290   295   300
Pro Gly Thr Lys Lys Val Leu Thr Gln Ser Ile Arg Arg Tyr Gln Gln
305   310   315   320
Phe Phe Ser Asp Asp Glu Tyr Arg Asp Ile Glu Ser Glu Val Pro Leu
                325   330   335
Asn Arg Gln Thr Thr Pro Pro Pro Ser Tyr Glu Thr Leu Phe His Glu
            340   345   350
Glu Gly Ser Asp Gly Ser Ser Asn Val Ile Pro Arg Glu Ser Pro Pro
            355   360   365
Ala Tyr Ser Thr Ile Asp Ser Ser Asn Ser Pro Phe Pro Ser Ser Ser
370   375   380
Pro Pro Pro Tyr Tyr Arg
385   390

        <210> 244
        <211> 163
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 244
Lys Ser Leu Lys Tyr Cys Ser Leu Tyr Gln Phe Ser Gln Lys Pro Thr
1   5   10   15
Val Ile Leu Met Ala Cys Ser Ile Phe Phe Arg Met Ser Gln Gly Asp
            20   25   30
Tyr Asp Asp Glu Pro Leu Ser Lys Lys Thr Ala Cys Leu Val Val Asp
        35   40   45
Thr Met Leu Tyr Pro Val Ile Ala Val Val Cys Ala Val Val Ser Val
        50   55   60
Val Leu Leu Ile Leu Lys Val Leu Phe Leu Leu Leu Ser Phe Pro Phe
65   70   75   80
Lys Leu Cys Ser Ala Ser Ser Ala Leu Pro Gly Glu Arg Val Ser Leu
                85   90   95
Gly Ser His Phe Lys Cys Leu Tyr Gly Gly Gly Leu Pro Tyr Leu Leu
            100   105   110
Ala Cys Leu Leu Ile Val Pro Val Ile Gly Thr Ala Ile His Gly Phe
        115   120   125
Ile Ile Ser His Arg Thr Ser Glu Asp Ala Arg Leu Ser Ser Ala Ile
        130   135   140
Val Phe Met Gln Ala Pro Ile Leu Gln Leu Ala Gly Met Ser Gly Leu
145   150   155   160
Ile Lys Pro

546

<210> 245
<211> 159
<212> PRT
<213> Chlamydia pneumoniae

<400> 245
Ile Asn Tyr Asn Tyr Leu Val Phe Leu Leu Lys Phe Val Lys Gly Arg
1   5   10   15
Ile Ile Met Ala Cys Ser Ile Gly Tyr His Leu Cys Asn Ala Asn Glu
            20   25   30
Pro Asp Arg Phe Val Ala Ser Lys Val Ala Leu Val Ala Asp Ile Leu
        35   40   45
Leu Tyr Pro Phe Met Ala Val Ile Cys Ala Val Val Phe Ala Val Leu
    50   55   60
Met Val Val Lys Leu Leu Phe Leu Ala Ile Lys Phe Leu Val Asn Thr
65   70   75   80
Cys Ile Ala Ala Cys Lys Ser Arg Pro Leu Pro Ser Cys Lys Glu Asn
            85   90   95
Phe Gln Cys Leu Phe Gly Pro Lys Asp Lys Pro Gly Pro Ser Asp Trp
            100   105   110
Leu Gly Cys Leu Val Leu Ile Pro Ile Ile Gly Thr Leu Ile Tyr Ser
        115   120   125
Thr Ile Ile Thr Val Gln Ser Asp Thr Asn Arg Leu Arg Tyr Phe Ile
    130   135   140
Ile Ser Pro Ala Tyr Gln Val Gly Ser Thr Ala Ile Ile Asn Trp
145   150   155

<210> 246
<211> 217
<212> PRT
<213> Chlamydia pneumoniae

<400> 246
Gly Ala Phe Glu Val Thr Lys Gly Ser Val Phe Ile Ile Met Gly Pro
1   5   10   15
Pro Gly Ser Gly Lys Gly Thr Gln Ser Gln Tyr Leu Ala Asn Arg Ile
            20   25   30
Gly Leu Pro His Ile Ser Thr Gly Asp Leu Leu Arg Ala Ile Ile Arg
        35   40   45
Glu Gly Thr Pro Asn Gly Leu Lys Ala Lys Ala Tyr Leu Asp Lys Gly
    50   55   60
Ala Phe Val Pro Ser Asp Phe Val Trp Glu Ile Leu Lys Glu Lys Leu
65   70   75   80
Gln Ser Gln Ala Cys Ser Lys Gly Cys Ile Ile Asp Gly Phe Pro Arg
            85   90   95
Thr Leu Asp Gln Ala His Leu Leu Asp Ser Phe Leu Met Asp Val His
            100   105   110
Ser Asn Tyr Thr Val Ile Phe Leu Glu Ile Ser Glu Asp Glu Ile Leu
        115   120   125
Lys Arg Val Cys Ser Arg Phe Leu Cys Pro Ser Cys Ser Arg Ile Tyr
    130   135   140
Asn Thr Ser Gln Gly His Thr Glu Cys Pro Asp Cys His Val Pro Leu
145   150   155   160
Ile Arg Arg Ser Asp Asp Thr Pro Glu Ile Ile Lys Glu Arg Leu Thr
            165   170   175
Lys Tyr Gln Glu Arg Thr Ala Pro Val Ile Ala Tyr Tyr Asp Ser Leu
        180   185   190
Gly Lys Leu Cys Arg Val Ser Ser Glu Asn Lys Glu Asp Leu Val Phe
        195   200   205
Glu Asp Ile Leu Lys Cys Ile Tyr Lys
210   215

547

<210> 247
<211> 291
<212> PRT
<213> Chlamydia pneumoniae

<400> 247

```
Thr Cys Gln Lys Glu Ile Met Lys His Tyr Leu Ser Phe Ser Pro Ser
1               5                   10                  15
Ala Asp Phe Phe Ser Lys Gln Gly Ala Ile Glu Thr Gln Val Leu Phe
            20                  25                  30
Gly Glu Arg Val Leu Val Lys Gly Ser Thr Cys Tyr Ala Tyr Ser Gln
        35                  40                  45
Leu Phe His Asn Glu Leu Leu Trp Lys Pro Tyr Pro Gly His Ser Phe
    50                  55                  60
Arg Ser Thr Leu Val Pro Cys Thr Pro Glu Phe His Ile His Pro Asn
65                  70                  75                  80
Val Ser Val Val Ser Val Asp Ala Phe Leu Asp Pro Trp Gly Ile Pro
                85                  90                  95
Leu Pro Phe Gly Thr Leu Leu His Val Asn Ser Gln Asn Thr Val Ile
            100                 105                 110
Phe Pro Lys Asp Ile Leu Asn His Met Asn Thr Ile Trp Gly Ser Gly
        115                 120                 125
Thr Pro Gln Cys Asp Pro Arg His Leu Arg Arg Leu Asn Tyr Asn Phe
    130                 135                 140
Phe Ala Glu Leu Leu Ile Lys Asp Ala Asp Leu Leu Leu Asn Phe Pro
145                 150                 155                 160
Tyr Val Trp Gly Gly Arg Ser Val His Glu Ser Leu Glu Lys Pro Gly
                165                 170                 175
Val Asp Cys Ser Gly Phe Ile Asn Ile Leu Tyr Gln Ala Gln Gly Tyr
            180                 185                 190
Asn Val Pro Arg Asn Ala Ala Asp Gln Tyr Ala Asp Cys His Trp Ile
        195                 200                 205
Ser Ser Phe Glu Asn Leu Pro Ser Gly Gly Leu Ile Phe Leu Tyr Pro
    210                 215                 220
Lys Glu Glu Lys Arg Ile Ser His Val Met Leu Lys Gln Asp Ser Ser
225                 230                 235                 240
Thr Leu Ile His Ala Ser Gly Gly Gly Lys Lys Val Glu Tyr Phe Ile
                245                 250                 255
Leu Glu Gln Asp Gly Lys Phe Leu Asp Ser Thr Tyr Leu Phe Phe Arg
            260                 265                 270
Asn Asn Gln Arg Gly Arg Ala Phe Phe Gly Ile Pro Arg Lys Arg Lys
        275                 280                 285
Ala Phe Leu
    290
```

<210> 248
<211> 135
<212> PRT
<213> Chlamydia pneumoniae

<400> 248

```
Val Val Ala Lys Ser Thr Ile Gln Glu Ser Val Ala Thr Gly Arg Arg
1               5                   10                  15
Lys Gln Ala Val Ser Ser Val Arg Leu Arg Pro Gly Ser Gly Lys Ile
            20                  25                  30
Asp Val Asn Gly Lys Ser Phe Glu Asp Tyr Phe Pro Leu Glu Ile Gln
        35                  40                  45
Arg Thr Thr Ile Leu Ser Pro Leu Lys Lys Ile Thr Glu Asp Gln Ser
    50                  55                  60
Gln Tyr Asp Leu Ile Ile Arg Val Ser Gly Gly Gly Ile Gln Gly Gln
65                  70                  75                  80
```

```
Val Ile Ala Thr Arg Leu Gly Leu Ala Arg Ala Leu Leu Lys Glu Asn
                  85                  90                  95
Glu Glu Asn Arg Gln Asp Leu Lys Ser Cys Gly Phe Leu Thr Arg Asp
              100                 105                 110
Pro Arg Lys Lys Glu Arg Lys Lys Tyr Gly His Lys Lys Ala Arg Lys
          115                 120                 125
Ser Phe Gln Phe Ser Lys Arg
      130                 135

        <210> 249
        <211> 154
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 249
Asp Ser Tyr Ile Ile Met Glu Lys Arg Lys Asp Thr Lys Thr Thr Ile
  1               5                  10                  15
Val Lys Ser Ser Glu Thr Thr Lys Ser Trp Tyr Val Val Asp Ala Ala
          20                  25                  30
Gly Lys Thr Leu Gly Arg Leu Ser Ser Glu Val Ala Lys Ile Leu Arg
          35                  40                  45
Gly Lys His Lys Val Thr Tyr Thr Pro His Val Ala Met Gly Asp Gly
      50                  55                  60
Val Ile Val Ile Asn Ala Glu Lys Val Arg Leu Thr Gly Ala Lys Lys
65                  70          .       75                  80
Gly Gln Lys Ile Tyr Arg Tyr Tyr Thr Gly Tyr Ile Ser Gly Met Arg
              85                  90                  95
Glu Ile Pro Phe Glu Asn Met Met Ala Arg Lys Pro Asn Tyr Ile Ile
              100                 105                 110
Glu His Ala Ile Lys Gly Met Met Pro Arg Thr Arg Leu Gly Lys Lys
      115                 120                 125
Gln Leu Lys Ser Leu Arg Ile Val Lys Gly Asp Ser Tyr Glu Thr Phe
      130                 135                 140
Glu Ser Gln Lys Pro Ile Leu Leu Asp Ile
145                 150

        <210> 250
        <211> 268
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 250
Arg Ser Pro Pro Gly Tyr Leu Glu Ser Arg Val Arg Tyr Ala Thr Phe
  1               5                  10                  15
Ser Arg Ser Phe Arg Ser Pro Ala Cys Lys Lys Ser Arg Lys Asn Ala
          20                  25                  30
Cys Leu Arg Asn Phe Lys Ser Arg Leu Ala Met Ser Leu Leu Ile Glu
          35                  40          .           45
Ala Lys Asn Leu Ser Lys Thr Ile Gln Gln Gln Asn Gln Asn Ile Ser
          50                  55                  60
Ile Leu Thr Asp Val Ser Leu Ser Leu His Ala Gly Glu Thr Ile Ser
65                  70                  75                  80
Ile Thr Gly Ala Ser Gly Asn Gly Lys Thr Thr Leu Leu His Leu Leu
              85                  90                  95
Gly Thr Leu Asp Val Pro Ser Ser Gly Ser Leu Arg Phe Phe Asp Lys
              100                 105                 110
Asp Leu Lys Asn Gln Asp Leu Ala Asn Phe Arg Asn Gln His Ile Gly
          115                 120   .            125
Phe Val Phe Gln Asn Phe Tyr Leu Leu Glu Asp Asp Thr Val Leu Lys
      130                 135                 140
```

549

```
Asn Val Leu Met Pro Ala Leu Ile Ala Arg Lys Asn Ile Ser Lys Gly
145             150                 155                 160
Ser Pro Val Tyr Thr Arg Ala Leu Glu Leu Leu Asp Leu Val Asn Leu
            165                 170                 175
Glu Asp Lys Val Arg Thr Arg Cys Ser Lys Leu Ser Gly Gly Glu Lys
            180                 185                 190
Gln Arg Val Ala Ile Ala Arg Ala Leu Ile Asn Glu Pro Ala Ile Leu
        195                 200                 205
Leu Ala Asp Glu Pro Ser Gly Asn Leu Asp Glu Glu Thr Ser Glu Gln
    210                 215                 220
Ile His Asn Leu Leu Leu Glu Gln Ala Ser Ala Leu Cys Gly Ile Leu
225                 230                 235                 240
Ile Val Thr His Asn Lys His Leu Ala Ser Arg Cys Ser Arg Glu Gly
            245                 250                 255
Val Leu Ser Asn Gly Lys Leu Phe Phe His Asn Ser
            260                 265


        <210> 251
        <211> 506
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 251
Leu Glu Val Met Lys Phe Glu Phe Ser Val Ala Leu Lys Tyr Leu Ile
1               5                   10                  15
Pro Gly Arg Gly Arg Leu Tyr Ser Ala Ile Val Ser Leu Phe Ser Val
            20                  25                  30
Gly Ile Ile Ser Leu Val Val Trp Leu Ser Ile Val Phe Ile Ser Val
            35                  40                  45
Ile His Gly Leu Glu Gln Arg Trp Ile Glu Asp Leu Ser Gln Leu His
    50                  55                  60
Ser Pro Ile Thr Ile Leu Pro Ser Asp Thr Tyr Tyr Ser Ser Tyr Tyr
65                  70                  75                  80
Tyr Gln Ile Asp Lys His Ser Ser Leu Ser Asn Tyr Thr Thr Lys Thr
            85                  90                  95
Leu Gly Glu Lys Ile Ala Ser Pro Gln Val Asp Pro Tyr Asp Pro Glu
            100                 105                 110
Ser Asp Tyr Leu Leu Pro Glu Thr Phe Pro Leu Lys Asp Cys Asp Leu
            115                 120                 125
Gly Gly Gln Gln Lys Asp Pro Val Lys Met Thr Leu Glu Ser Leu Gly
    130                 135                 140
Pro Tyr Leu Gln Ser Gln His Gly Lys Val Ile Glu Phe Glu Gln Gly
145                 150                 155                 160
Val Gly Tyr Leu Asp Ile Lys Thr Ser Leu Lys Leu Gln Lys Pro Gln
            165                 170                 175
Pro Arg Asn Leu Thr His Phe Leu Thr Tyr Pro Ser Lys Leu Ser Tyr
            180                 185                 190
Glu Asp Lys Val Leu Pro Tyr Asp Glu Thr Asp Tyr Thr Ser Ala Glu
        195                 200                 205
Leu Asn Pro Phe Asn Arg Ser Pro Ser Gly Trp Gln Gln Asp Phe His
    210                 215                 220
His Leu Glu Glu Leu Tyr Arg Gly Ala Ser Ile Ile Leu Pro Ser Thr
225                 230                 235                 240
Tyr Lys Asp Ser Gly Tyr Lys Val Gly Asp Thr Gly Val Phe Ser Thr
            245                 250                 255
Tyr Ser Ile Glu Asn Glu Lys Glu Thr Gln Tyr Thr Val His Val Ile
            260                 265                 270
Gly Phe Tyr Asn Pro Gly Leu Ser Pro Leu Gly Gly Arg Thr Val Phe
            275                 280                 285
Ile Asp Pro Asp Leu Ala Arg Ser Ile Arg Ser Gln Ser Glu Gly Leu
    290                 295                 300


                                    550
```

```
Gly Met Ser Asn Gly Phe His Leu Phe Phe Pro Asn Thr Lys Arg Ile
305                 310                 315                 320
Val Phe Val Lys Lys Gln Ile Glu Asn Ile Leu Thr Ser Leu Gly Val
                325                 330                 335
Asp Asp Tyr Trp Glu Ile Ser Ser Leu His Asp Tyr Asp Tyr Phe Gln
                340                 345                 350
Pro Ile Leu Asp Gln Leu Gln Ser Asp Gln Val Leu Phe Leu Phe Val
            355                 360                 365
Cys Ile Leu Ile Leu Ile Val Ala Cys Ser Asn Ile Val Thr Met Ser
        370                 375                 380
Met Leu Leu Val Asn Asn Lys Lys Lys Glu Ile Gly Ile Leu Lys Ala
385                 390                 395                 400
Met Gly Thr Ser Ser Arg Ser Leu Lys Ile Ile Phe Ala Cys Cys Gly
                405                 410                 415
Ala Phe Ser Gly Ala Cys Gly Val Val Ile Gly Thr Ile Phe Ala Ile
                420                 425                 430
Ile Thr Leu Lys Asn Leu Gln Phe Ile Val Lys Ala Leu Asn Tyr Leu
            435                 440                 445
Gln Gly Arg Glu Thr Phe Asn Thr Ala Phe Phe Gly Gln Asn Leu Pro
        450                 455                 460
Asn Ser Val His Pro Gln Ala Ile Tyr Phe Leu Gly Leu Gly Thr Leu
465                 470                 475                 480
Leu Leu Ala Ala Val Ser Gly Ala Leu Pro Ala Arg Lys Val Ala Lys
                485                 490                 495
Met His Val Ser Glu Ile Leu Lys Ala Asp
                500                 505
```

```
        <210> 252
        <211> 56
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 252
Lys Asp Ser Ser Met Ala Ser Lys Asn Arg Glu Ile Ile Lys Leu Lys
1               5                   10                  15
Ser Ser Glu Ser Ser Asp Met Tyr Trp Thr Val Lys Asn Lys Arg Lys
                20                  25                  30
Thr Thr Gly Arg Leu Glu Leu Lys Lys Tyr Asp Arg Lys Leu Arg Arg
            35                  40                  45
His Val Ile Phe Lys Glu Ala Arg
        50                  55


        <210> 253
        <211> 508
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 253
Ser Pro Asp Ser Cys Leu Pro Trp Met Ser Pro Phe Lys Lys Ile Val
1               5                   10                  15
Asn Arg Leu Leu Cys Tyr Ile Ser Phe Gln Lys Glu Ser Arg Thr Leu
                20                  25                  30
Pro Ile Ile Ile Arg Glu Pro Arg Met Thr Thr Lys Ser Leu Gly Ser
            35                  40                  45
Phe Asn Ser Val Ile Ser Lys Asn Lys Ile His Phe Ile Ser Leu Gly
        50                  55                  60
Cys Ser Arg Asn Leu Val Asp Ser Glu Val Met Leu Gly Ile Leu Leu
65                  70                  75                  80
Lys Ala Gly Tyr Glu Ser Thr Asn Glu Ile Glu Asp Ala Asp Tyr Leu
                85                  90                  95
```

551

```
Ile Leu Asn Thr Cys Ala Phe Leu Lys Ser Ala Arg Asp Glu Ala Lys
        100                     105                 110
Asp Tyr Leu Asp His Leu Ile Asp Val Lys Lys Glu Asn Ala Lys Ile
        115                 120                 125
Ile Val Thr Gly Cys Met Thr Ser Asn His Lys Asp Glu Leu Lys Pro
        130                 135                 140
Trp Met Ser His Ile His Tyr Leu Leu Gly Ser Gly Asp Val Glu Asn
145                     150                 155                 160
Ile Leu Ser Ala Ile Glu Ser Arg Glu Ser Gly Glu Lys Ile Ser Ala
                165                 170                 175
Lys Ser Tyr Ile Glu Met Gly Glu Val Pro Arg Gln Leu Ser Thr Pro
            180                 185                 190
Lys His Tyr Ala Tyr Leu Lys Val Ala Glu Gly Cys Arg Lys Arg Cys
            195                 200                 205
Ala Phe Cys Ile Ile Pro Ser Ile Lys Gly Lys Leu Arg Ser Lys Pro
        210                 215                 220
Leu Asp Gln Ile Leu Lys Glu Phe Arg Ile Leu Val Asn Lys Ser Val
225                 230                 235                 240
Lys Glu Ile Ile Leu Ile Ala Gln Asp Leu Gly Asp Tyr Gly Lys Asp
                245                 250                 255
Leu Ser Thr Asp Arg Ser Ser Gln Leu Glu Ser Leu Leu His Glu Leu
        260                 265                 270
Leu Lys Glu Pro Gly Asp Tyr Trp Leu Arg Met Leu Tyr Leu Tyr Pro
        275                 280                 285
Asp Glu Val Ser Asp Gly Ile Ile Asp Leu Met Gln Ser Asn Pro Lys
        290                 295                 300
Leu Leu Pro Tyr Val Asp Ile Pro Leu Gln His Ile Asn Asp Arg Ile
305                 310                 315                 320
Leu Lys Gln Met Arg Arg Thr Thr Ser Arg Glu Gln Ile Leu Gly Phe
            325                 330                 335
Leu Glu Lys Leu Arg Ala Lys Val Pro Gln Val Tyr Ile Arg Ser Ser
        340                 345                 350
Val Ile Val Gly Phe Pro Gly Glu Thr Gln Glu Glu Phe Gln Glu Leu
        355                 360                 365
Ala Asp Phe Ile Gly Glu Gly Trp Ile Asp Asn Leu Gly Ile Phe Leu
370                 375                 380
Tyr Ser Gln Glu Ala Asn Thr Pro Ala Ala Glu Leu Pro Asp Gln Ile
385                 390                 395                 400
Pro Glu Lys Val Lys Glu Ser Arg Leu Lys Ile Leu Ser Gln Ile Gln
            405                 410                 415
Lys Arg Asn Val Asp Lys His Asn Gln Lys Leu Ile Gly Glu Lys Ile
        420                 425                 430
Glu Ala Val Ile Asp Asn Tyr His Pro Glu Thr Asn Leu Leu Leu Thr
        435                 440                 445
Ala Arg Phe Tyr Gly Gln Ala Pro Glu Val Asp Pro Cys Ile Ile Val
        450                 455                 460
Asn Glu Ala Lys Leu Val Ser His Phe Gly Glu Arg Cys Phe Ile Glu
465                 470                 475                 480
Ile Thr Gly Thr Ala Gly Tyr Asp Leu Val Gly Arg Val Val Lys Lys
                485                 490                 495
Ser Gln Asn Gln Ala Leu Leu Lys Thr Ser Lys Ala
            500                 505

        <210> 254
        <211> 179
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 254
Ala Thr Ser Thr Val Cys Ala Leu Trp Ile Leu Gln Thr Tyr Gln Ser
 1               5                   10                  15
```

```
His Asp Asp Ala Ala Ser Cys Ser Phe Arg Arg Ala Cys Arg Phe Gly
        20                  25                  30
Arg Tyr Trp Leu Gly Gly Val Asn Val Pro Trp Asn Lys Phe Asn Gln
        35                  40                  45
Thr Ser Thr Gln Ser Thr Val Ile Asn Ser Ala Ile Tyr Ile Asp Ser
    50                  55                  60
Ser Gln Thr Trp Met Met Arg Phe Gln Ala Ser Ala Ser Ile Pro Arg
65                  70                  75                      80
Leu Phe Arg Ile Ser Ile Phe Met Thr Lys His Gly Asp Trp Ile Asp
            85                  90                  95
Asn Gly Thr Gly Gly Glu Leu Leu Leu Val Ala Tyr Glu Ala Asn Gln
        100                 105                 110
Asn Pro Leu Phe Pro Asp Ile Arg Ile Glu Leu Ala Met Ser Thr Cys
        115                 120                 125
Ser Gly Thr Ser Tyr Tyr Arg Ala Arg Pro Met Gln Trp Leu Cys Ser
    130                 135                 140
Thr Tyr Tyr Ala Val Arg Pro Gly Tyr Phe Val Leu Glu Asn Arg Ser
145                 150                 155                     160
Tyr Ser Phe Arg Val Gln Ser Phe Ser Trp Asn Ile Ala Thr Leu Pro
            165                 170                 175
Phe Val Asn
```

<210> 255
<211> 175
<212> PRT
<213> Chlamydia pneumoniae

<400> 255

```
Phe Cys Gly Gly Arg Leu Met Ser Ser Ser Ile Pro Thr Thr Gln Lys
1               5                   10                  15
Ile Thr Ile Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Glu Ser Ile
        20                  25                  30
Asn Leu Thr Asp Glu Gln Lys Lys Thr Ala Leu Thr Ile Gly Gln Asn
        35                  40                  45
Ile Ala Thr Glu Asn Thr Gln Val Leu Gly Asn Phe Val Asp Ala Asp
    50                  55                  60
Gly Gly Leu Ile Cys Gln Asn Asp Leu Ser Val Gly Gly Asn Ile Asn
65                  70                  75                      80
Ile Thr Pro Gln Thr Phe Asn Thr Met Val Phe Ser Gly Arg Val Asn
            85                  90                  95
Leu Ser Asn Ser Pro Phe Ser Tyr Gln Asp Ser Leu Gly Asn Lys Arg
        100                 105                 110
Gln Asp Tyr Ala Asn Ile Asn Thr Glu Gln Pro Gln Gln Tyr Val Pro
        115                 120                 125
Tyr Gly Tyr Tyr Lys Leu Thr Arg Val Met Met Met Gln Arg Ala Ala
    130                 135                 140
Leu Ser Gly Gly His Val Gly Ser Gly Asp Ile Gly Trp Gly Glu Ser
145                 150                 155                     160
Met Tyr Leu Gly Ile Ser Ser Ile Lys Arg Gln His Lys Val Gln
            165                 170                 175
```

<210> 256
<211> 270
<212> PRT
<213> Chlamydia pneumoniae

<400> 256

```
Ile Pro Met Lys Thr Leu Gly Val Lys Asp Gln Asn Leu Phe Ile Asp
1               5                   10                  15
```

553

```
Gln Ala Thr Leu Ser Val Glu Arg Asn Val Arg Ile Glu Asn Asn Leu
            20              25                  30
Glu Thr Arg Asp Leu Lys Val Leu Asp Thr Thr Thr Ser Pro Cys Glu
        35              40                  45
Phe Ile Val Lys Gly Asn Val Ser Ala Glu Gly Ser Gln Leu Asn Ala
    50              55                  60
Thr Thr Leu Ser Asp Gly Phe Asn Ile Tyr Ser Lys Thr Asp Val Ser
65              70                  75                      80
Gln Thr Pro Val Cys Asn Asn Ile Ser Asp Pro Gln Ser Ala Arg Asp
            85                  90                      95
Ala Leu Thr Phe Ser Tyr Tyr Arg Lys Thr Gly Cys Gln Ala Ala Asn
            100             105                 110
Leu Tyr Thr Tyr Tyr Pro Gly Asn Gly Tyr Tyr Val Ala Pro Asn Thr
        115             120                 125
Thr Ile Glu Thr His Val Ala Ala Ile Thr Ser Lys Ser Val Ser Arg
    130             135                 140
Asn Ala Thr Pro Asp Phe Ser Arg Tyr Ala Asp Ile Glu Pro Val Val
145             150                 155                     160
Lys Leu Lys Gln Val Gly Ile Tyr Gln Val Thr Met Gln Leu Thr Arg
            165                 170                 175
Trp Ser Gly Gln His Asp Gly Asp Asn Ser Ala Thr Leu Ile Leu Asn
            180                 185                 190
Phe Val Ser Gly Asn Asn Lys Thr Leu Leu Cys Thr Ser Asp Thr Arg
    195                 200                 205
Gly Gly Tyr Ser Ser Asp Arg Thr Ser Val Ala Val Thr Ala Ile Phe
    210                 215                 220
Ser Val Thr Glu Leu Val Ser Ser Pro Pro Tyr Asp Tyr Pro Trp Ile
225                 230                 235                 240
Asn Leu Glu Ser Thr Ile Trp Met Asn Leu Met Ser Leu Ser Thr Cys
            245                 250                 255
Val Ile Trp Phe Pro Phe Pro Ser Asn Phe Val Glu Val Asp .
            260                 265                 270

        <210> 257
        <211> 285
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 257
Thr Leu Leu Lys Val Ile Met Lys Asn Asn Ile Asn Asn Asn Glu Cys
1               5               10                  15
Tyr Phe Lys Leu Asp Ser Thr Val Asp Gly Asp Leu Leu Ala Ala Asn
            20              25                  30
Leu Lys Thr Phe Asp Thr Gln Ala Gln Gly Ile Ser Ser Thr Glu Thr
        35              40                  45
Phe Ser Val Gln Gly Asn Ala Thr Phe Lys Asp Gln Val Ser Ala Thr
    50              55                  60
Gly Leu Thr Ser Gly Thr Thr Tyr Asn Leu Asn Ala Gln Asn Phe Thr
65              70                  75                      80
Ser Ser Gln Ile Ser Ile Asp Phe Lys Asn Asn Arg Leu Ser Asn Cys
            85                  90                      95
Ala Leu Pro Lys Glu Asp Cys Asp Pro Val Pro Ala Asn Tyr Val Arg
            100             105                 110
Ser Pro Glu Tyr Phe Phe Cys Ser Lys Pro Leu Ile Gly Asp Phe Asp
        115             120                 125
Phe Asn Ser Gly Glu Ser Tyr Leu Pro Leu Thr Gly Ser Glu Tyr Thr
    130             135                 140
Leu Tyr Gln Ser Arg Asn Val Asn Ser Ile Phe Arg Phe Ile Gly Trp
145             150                 155                     160
Lys Gln Ser Thr Arg Glu Leu Thr Val Gly Gly Asn Thr Ala Ile Gln
            165                 170                 175
```

554

```
Phe Leu Ala Ala Gly Thr Tyr Ile Val Ser Phe Thr Val Gly Lys Arg
        180                 185                 190
Trp Gly Trp Asn Asn Gly Trp Gly Gly Ala Ile Tyr Ile Asn Asn Gly
        195                 200                 205
Leu Gly Gln Val Gln Cys Glu Ser Thr Ile Tyr Ser Gly Gly Gly Tyr
        210                 215                 220
Ala Thr Ile Gly Thr Leu Gly Thr Ser Ile Tyr Arg Ala Ser Val Asp
225                 230                 235                 240
Val Ala Pro Asn Pro Asn Asp Pro Asn Ala Ser Asp Arg Tyr Arg Ala
        245                 250                 255
Gly Ile Phe Tyr Leu Ser Asn Gly Gly Ser Ser Ala Gly Ile Gly Asn
        260                 265                 270
Tyr Ser Phe Ser Leu Leu Tyr Tyr Pro Asp Asp Arg Gly
        275                 280                 285
```

<210> 258
<211> 295
<212> PRT
<213> Chlamydia pneumoniae

<400> 258
```
Phe Cys Gly Gly Arg Leu Met Ser Asn Pro Thr Pro Lys Thr Lys Ile
1                   5                   10                  15
Ser Ile Pro Thr Phe Val Arg Phe Asn Ile Gln Ser Ile Asn Leu Thr
        20                  25                  30
Glu Asp Gln Lys Lys Thr Thr Phe Thr Val Gly Gly Lys Val Thr Thr
        35                  40                  45
Glu Asn Thr Val Val Arg Gly Asp Leu Thr Cys Thr Asp Gly Gly Leu
        50                  55                  60
Thr Cys Gln Ser Asp Leu Thr Ile Gln Lys Asp Ile Asn Ile Arg Pro
65                  70                  75                  80
Thr Ser Thr Asn Ser Met Val Phe Asp Gly Arg Leu Asn Leu Ser Asn
        85                  90                  95
Ser Pro Leu Ser Tyr Lys Asn Ser Gln Gly Gln Asp Ile Thr Asp Tyr
        100                 105                 110
Glu Lys Met Ser Ser Gly Lys Pro Gln Glu Tyr Val Pro Phe Gly Tyr
        115                 120                 125
Tyr Lys Arg Thr Gln Ile Met Met Ala Gln Arg Ala Ala His Ser Ser
        130                 135                 140
Gly Tyr Val Gly Gly Gly Ser Val Pro Ser Gly Ser Tyr Val Pro Trp
145                 150                 155                 160
Asn Lys Phe Asp Gln Thr Ser Thr Gln Lys Thr Ser Gly Thr Glu Ile
        165                 170                 175
Tyr Ile Asp Pro Asn Asp Ser Thr Lys Leu Val Phe Glu Val Asn Asn
        180                 185                 190
Lys Val Pro Lys Leu Phe Arg Ile Ser Val Ile Met Ala Lys His Gly
        195                 200                 205
Ser Trp Leu Asp Asn Gly Thr Gly Ala Asp Ile Leu Leu Ala Ala Asn
        210                 215                 220
Glu Tyr Glu Gln Gly Gly Gly Arg Ile Asn Val Thr Asp Leu Ala Met
225                 230                 235                 240
Thr Thr Ser Arg Gly Ser Ser Tyr Tyr Glu Thr Arg Pro Leu Gln Val
        245                 250                 255
Val Cys Val Thr Tyr Tyr Ala Gln Asn Asn Gly Tyr Phe Thr Phe Gln
        260                 265                 270
Asn Arg Ala Gly Gly Gly Leu Arg Val Ser Phe Phe Ser Trp Asn Ile
        275                 280                 285
Val Ala Leu Pro Tyr Val Glu
290                 295
```

555

<210> 259
<211> 290
<212> PRT
<213> Chlamydia pneumoniae

<400> 259
```
Gly Val Val Met Lys Arg Arg Asn Leu Gln Lys Ile Leu Pro Asn Ala
1               5                   10                  15
Ser Thr Pro Ser Thr Asn Val Ala Glu Asn Thr Gly Ile Lys Asp Gln
            20                  25                  30
Asn Leu Phe Leu Asp Gln Ala Thr Leu Asn Val Asp Gly Asn Val Asp
        35                  40                  45
Ile Glu Asn Phe Leu Glu Thr Arg Asp Leu Lys Val Ala Asp Thr Ile
    50                  55                  60
Thr Ser Pro Cys Glu Phe Thr Val Gly Gly Gly Leu Ser Ala Glu Ser
65                  70                  75                  80
Ser Gln Phe Lys Ala Thr Thr Leu Ser Lys Gly Leu Glu Ile Thr Ser
            85                  90                  95
Glu Asp Gln Asp Gly Arg Val Pro Lys Phe Thr Asn Val Ser Asp Pro
            100                 105                 110
Gln Ser Pro Arg Asp Ala Leu Thr Tyr Asn Tyr Tyr Arg Asn Thr Gly
        115                 120                 125
Cys Gln Ala Leu Asn Leu Tyr Thr Tyr Tyr Ser Ser Ser Gln Pro Thr
    130                 135                 140
Thr Val Gly Lys Pro Ile Glu Thr Val Cys Gln Asn Pro Asn Pro Glu
145                 150                 155                 160
Thr Tyr Arg Ile Ser Ala Ser Ala Lys Ile Tyr Asp Ala Val Thr Arg
            165                 170                 175
Phe Pro Tyr Ile Gln Phe Lys Ala Pro Gly Ile Tyr Gln Val Thr Ile
            180                 185                 190
Gln Ile Arg Arg Glu Ser Gly Gln His Ser Gly Leu Asp Asn Pro Asn
    195                 200                 205
Leu Tyr Leu Asn Leu Met Ile Gly Asn Asn Lys Thr Leu Leu Cys Ala
    210                 215                 220
Ser Asp Thr Arg Gly Tyr Ser Gly Gly His Arg Thr Ser Ile Ala Val
225                 230                 235                 240
Thr Gly Thr Phe Thr Leu Thr Glu Ile Val Ala Thr Pro Pro His Asp
            245                 250                 255
Tyr Pro Trp Leu Phe Leu Glu Thr Thr Ile Gly Leu Asp Ile Lys Ser
            260                 265                 270
Met Ser Thr Cys Val Ile Trp Phe Pro Phe Gln Ala Asn Phe Ala Glu
            275                 280                 285
Val Asp
290
```

<210> 260
<211> 134
<212> PRT
<213> Chlamydia pneumoniae

<400> 260
```
Cys Phe Ser Phe Cys Arg Leu Gly Ser Lys Phe Glu Lys Ile Thr Leu
1               5                   10                  15
Gly Gly Asn Thr Ala Ile Gln Leu Leu Ala Ala Gly Thr Tyr Ile Leu
            20                  25                  30
Thr Phe Thr Ile Gly Lys Arg Trp Gly Trp Asn Asn Gly Trp Gly Gly
        35                  40                  45
Ser Ile Arg Leu Phe Glu Gly Lys Tyr Thr Gly Asp Gly Thr Met Leu
    50                  55                  60
Cys Gly Ser Thr Val Tyr Ser Gly Gly Gly Tyr Ser Thr Ile Gly Tyr
65                  70                  75                  80
```

556

```
Leu Ser Thr Ala Val Tyr Arg Asp His Ser Asp Ile Asp Pro Asp Pro
                85                  90                  95
Asn Asn Pro Ser Asp Lys Tyr Met Asn Asn Phe Leu Phe Val Arg Asn
            100             105                 110
Gly Asp His Ser Ala Val Ile Gly Asn Tyr Ser Phe Thr Leu Leu Tyr
        115                 120             125
Phe Ala Gly Asp Lys Val
    130
```

        <210> 261
        <211> 197
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 261
```
Ile Tyr Phe Val Phe Lys Arg Lys Thr Tyr Asn Tyr Phe Ile Glu Met
1               5                   10                  15
Thr Thr Thr Asn Asn Gln Asp Asn Asn Glu Cys Tyr Phe Lys Leu Asp
            20                  25                  30
Ser Thr Val Asp Gly Asp Leu Leu Ala Ser Asn Ile Gln Thr Phe Asp
        35                  40                  45
Lys Gln Ala Lys Gly Ile Ser Ser Thr Glu Thr Phe Ser Val Gln Gly
    50                  55                  60
Asn Ala Thr Phe Lys Glu Lys Val Ser Ala Thr Gly Leu Thr Ser Ala
65                  70                  75                  80
Ser Thr Tyr Lys Leu Asn Ala Thr Gly Pro Ala Pro Ser Ser Ile Thr
            85                  90                  95
Ile Asp Met Lys Asn Asn Arg Leu Ser Asn Pro Ala Leu Pro Lys Asn
            100             105                 110
Pro Cys Asp Pro Val Pro Ala Asn Tyr Val Arg Ser Pro Gln Tyr Phe
        115                 120                 125
Phe Cys Ala Lys Pro Ile Glu Gly Thr Phe Met Phe Asp Gly Ser Ser
    130             135                 140
Arg Tyr Leu Pro Ile Thr Gly Asp Gly Ser Asn Tyr Thr Leu Tyr Gln
145             150                 155                 160
Ser Ser Lys Ala Gly Asp Val Phe Arg Phe Val Asp Trp Asp Gln Asn
            165                 170                 175
Ser Lys Lys Leu His Leu Gly Gly Thr Gln Pro Tyr Asn Phe Leu Leu
        180                 185                 190
Gln Glu Pro Ile Ser
        195
```

        <210> 262
        <211> 181
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 262
```
Ala Tyr Leu Asp Phe Ser Lys Arg Ser Cys Val Glu Glu Asp His Val
1               5                   10                  15
Ser Lys Lys Ile Asn Arg Asn Asp Leu Cys Pro Cys Gly Ser Asn Lys
            20                  25                  30
Lys Tyr Lys Gln Cys Cys Leu Lys Lys Glu Glu Gln Thr Ala Arg Tyr
        35                  40                  45
Thr Thr Glu Gly Lys Phe Lys Phe Ser Ala Glu Val Leu Ser Ala Ser
        50                  55                  60
Glu Gln Gly Glu Ala Gly Asp Asn Cys Thr Lys Leu Phe Gln Arg Leu
65                  70                  75                  80
Ser Gln Ser Leu Thr Ser Glu Gln Lys Ala Ala Val Gly Lys Phe His
            85                  90                  95
```

557

```
Gln Ile Thr Lys Asn Lys Glu Val Met Ser Lys Lys Ala Leu Lys Lys
            100                 105                 110
Ala Gln Ala Lys Glu Glu Lys Leu Val Thr Glu Lys Leu Gln Gln His
            115                 120                 125
Asn Phe Glu Ile Leu Asn Thr Gly Glu Asn Leu Ala Pro Pro Met Glu
            130                 135                 140
Ser Thr Ala Thr Leu Asn Gln Asp Thr Asn Phe Val Cys Glu Asp Phe
145                 150                 155                 160
Ile Pro Thr Gln Glu Asp Phe Arg Ile Ser Glu Asn Ser Gln Lys Pro
            165                 170                 175
Pro Val Glu Glu Asp
            180


        <210> 263
        <211> 254
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 263
Tyr Ser Phe Asn His Pro Phe Ile Val Phe Met Ser Thr Leu Leu Leu
1               5                   10                  15
Asn Pro Pro Trp Met Lys Ala Gly Lys Arg Ile Glu Ser Leu Val Arg
            20                  25                  30
Lys Ala Leu Tyr Thr His Thr Met Leu Ala Asn His Arg Lys Ile Val
            35                  40                  45
Val Ala Leu Ser Gly Gly Lys Asp Ser Leu Thr Leu Leu Leu Met Leu
            50                  55                  60
Lys Ala Ile Ser Gly Arg Gly Phe Pro Asp Leu Asp Leu His Ala Val
65                  70                  75                  80
Asn Ile Gly Gly Lys Tyr Ser Cys Gly Ala Glu Val Asn Lys Pro Tyr
            85                  90                  95
Leu Thr Arg Ile Cys Asp Gln Leu Cys Ile Pro Phe Arg Thr Ile Pro
            100                 105                 110
Ser Pro Tyr Ala Pro Glu Thr Pro Glu Cys Tyr Pro Cys Ser Gln Ala
            115                 120                 125
Arg Arg Arg Leu Leu Phe Gln Ala Ala Lys Glu Ile Gly Ala Ser Ala
            130                 135                 140
Ile Ala Phe Gly His His Arg Asp Asp Leu Val Gln Thr Ala Leu Leu
145                 150                 155                 160
Asn Leu Leu His Lys Ala Glu Phe Ala Gly Met Leu Pro Val Leu Asp
            165                 170                 175
Met Val His Phe Gly Val Thr Ile Leu Arg Pro Leu Ile Phe Thr Pro
            180                 185                 190
Glu Phe Trp Ile Arg Lys Phe Ala Lys Glu Asn Gly Phe Ala Arg Val
            195                 200                 205
Thr Cys Arg Cys Pro Val Val Ser Leu Arg Ser Lys Ala Glu Gln Ser
            210                 215                 220
Leu Lys Leu Leu Glu Glu Val Phe Pro Leu Ala Arg His Asn Ile Ala
225                 230                 235                 240
Leu Ala Ile Gln Glu His Gly Ser Ser Lys Ser Gln Lys Ile
            245                 250


        <210> 264
        <211> 293
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 264
Leu Ile Phe Asn Ile Asn Lys Glu Val Lys Val Tyr Leu Val Leu Met
1               5                   10                  15
```

558

```
Asn Lys Arg Leu Lys Ile Ile Leu Thr Asn Asp Asp Gly Ile Thr Ala
        20              25                  30
Lys Gly Met Ser Cys Leu Val Ser Ala Leu Leu Glu Ala Asn Ile Gly
        35              40                  45
Asp Ile Tyr Ile Ala Ala Pro Gln Ala Glu Gln Ser Gly Lys Ser Met
    50              55                  60
Ala Ile Ser Leu Asn Gln Val Val Cys Ala Ser Pro Tyr Ala Tyr Pro
65              70                  75                  80
Gln Pro Val Lys Glu Ala Trp Ala Val Gly Gly Ser Pro Thr Asp Cys
            85                  90                  95
Val Arg Leu Gly Leu Arg Thr Leu Phe Glu Ser Val Ser Pro Asp Leu
            100             105                 110
Val Ile Ser Gly Ile Asn Cys Gly Asn Asn Ile Cys Lys Asn Ala Trp
        115             120                 125
Tyr Ser Gly Thr Ile Gly Ala Ala Lys Gln Ala Leu Val Asp Gly Ile
    130             135                 140
Pro Ser Met Ala Leu Ser Gln Asp Asn His Ile Ser Phe Phe Gln Gln
145             150                 155                 160
Asp Lys Ala Pro Glu Ile Leu Lys Ala Leu Val Ile Tyr Leu Leu Ser
            165             170                 175
Gln Pro Phe Pro Cys Leu Thr Gly Leu Asn Ile Asn Phe Pro Thr Ser
            180             185                 190
Pro Gly Gly Ser Ser Trp Glu Gly Met Arg Leu Val Pro Pro Gly Asp
        195             200                 205
Glu Phe Phe Tyr Glu Glu Pro Gln Tyr Leu Gly Ser Val Asn Lys Asn
    210             215                 220
Gln Tyr Tyr Val Gly Lys Ile Ser Gly Val Arg Ile Gly Glu His Pro
225             230                 235                 240
Ser Glu Glu Leu Ala Cys Met Leu Glu Asn His Ile Ser Val Ser Pro
            245             250                 255
Ile Phe Ser Gln Asn Ser Pro Ile Gly Leu Met Thr Leu Glu Glu Phe
            260             265                 270
Gln Lys Thr Gln Glu Asn Phe Asn Ala Ser Leu Leu Ser Ser Glu Leu
    275                 280                 285
Thr Thr Lys Ile Phe
    290
```

```
        <210> 265
        <211> 321
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 265
Ser Thr Ala Leu Ser Arg Arg Lys Leu Arg Val Arg Pro Pro Ser Leu
1               5                   10                  15
Ala Lys Tyr Ala Phe Arg Gly Phe Arg Met Ser His Gly Pro Arg Pro
            20              25                  30
Thr Lys Phe Ser Phe Pro Leu Tyr Phe Ser Lys Thr Leu Ser Trp Phe
        35              40                  45
Ile Leu Gly Gly Phe Leu Ala Ala Cys Gly Val Gln Met Val Leu Val
    50              55                  60
Pro Asn Glu Leu Ile Asp Gly Gly Ile Val Gly Leu Ser Ile Ile Ala
65              70                  75                  80
Ser His Phe Leu Gly His Lys Ala Leu Pro Phe Cys Leu Val Leu Phe
            85                  90                  95
Asn Leu Pro Phe Val Phe Leu Ala Phe Lys Gln Ile Gly Lys Tyr Phe
            100             105                 110
Val Ile Gln Met Leu Thr Ala Val Ile Ile Phe Ser Cys Ser Leu Trp
        115             120                 125
Leu Ile Asp Gln Leu Pro Ser Trp Leu Gly Met Ser Pro Phe Val Phe
    130             135                 140
```

```
Lys Gly Ser Glu Met Glu Thr Val Val Leu Gly Gly Ala Ile Ile Gly
145                 150                 155                 160
Val Gly Cys Gly Leu Ile Ile Arg His Gly Gly Ser Thr Asp Gly Thr
            165                 170                 175
Glu Ile Leu Gly Ile Ile Ile Asn Lys Lys Lys Gly Tyr Thr Val Gly
            180                 185                 190
Gln Ile Ile Leu Phe Val Asn Phe Phe Ile Phe Ala Leu Ser Gly Ile
        195             200             205
Val Tyr Lys Asn Trp His Thr Ala Phe Val Ser Phe Leu Thr Tyr Gly
    210             215             220
Ile Ala Thr Lys Val Met Asp Met Val Ile Leu Gly Leu Glu Asp Thr
225             230             235             240
Lys Ser Val Thr Ile Ile Thr Ser Ser Pro Arg Lys Leu Gly His Ile
            245             250             255
Leu Met Glu Thr Leu Gly Ile Gly Leu Thr Tyr Ile His Ala Glu Gly
        260             265             270
Gly Tyr Ser Gly Glu Pro Arg Asn Leu Leu Tyr Val Val Val Glu Arg
        275             280             285
Leu Gln Leu Ser Gln Leu Lys Glu Ile Val His Arg Glu Asp Pro Ser
    290             295             300
Ala Phe Ile Ala Ile Glu Asn Leu His Glu Val Ile Asn Gly Arg Arg
305             310             315             320
Thr
```

<210> 266
<211> 192
<212> PRT
<213> Chlamydia pneumoniae

```
<400> 266
Met Lys Arg Tyr Val Val Gly Ile Ser Gly Ala Ser Gly Val Ile Leu
  1           5               10                  15
Ala Val Lys Leu Ile Lys Glu Leu Val Asn Ala Lys His Gln Val Glu
            20              25                  30
Val Ile Ile Ser Pro Ser Gly Arg Lys Thr Leu Tyr Tyr Glu Leu Gly
            35              40                  45
Cys Gln Ser Phe Asp Ala Leu Phe Ser Glu Glu Asn Leu Glu Tyr Ile
    50              55              60
His Thr His Ser Ile Gln Ala Ile Glu Ser Ser Leu Ala Ser Gly Ser
65              70              75                  80
Cys Pro Val Glu Ala Thr Ile Ile Ile Pro Cys Ser Met Thr Thr Val
            85              90                  95
Ala Ala Ile Ser Ile Gly Leu Ala Asp Asn Leu Leu Arg Arg Val Ala
            100             105             110
Asp Val Ala Leu Lys Glu Arg Arg Pro Leu Ile Leu Val Pro Arg Glu
    115             120             125
Thr Pro Leu His Thr Ile His Leu Glu Asn Leu Leu Lys Leu Ser Lys
    130             135             140
Ser Gly Ala Thr Ile Phe Pro Pro Met Pro Met Trp Tyr Phe Lys Pro
145             150             155             160
Gln Ser Val Glu Asp Leu Glu Asn Ala Leu Val Gly Lys Ile Leu Ala
            165             170             175
Tyr Leu Asn Ile Pro Ser Asp Leu Thr Lys Gln Trp Ser Asn Pro Glu
            180             185             190
```

<210> 267
<211> 301
<212> PRT
<213> Chlamydia pneumoniae

<400> 267

```
Lys Ile Ile Ile Val Arg Leu Asn Tyr Phe Leu Asn Leu Val Asn Phe
1               5               10              15
Lys Tyr Ser Ile Phe Ser Ile Leu Phe Leu Ser Ala Ser Thr Val Phe
            20              25              30
Ala Leu Ser Ile Asn Glu Ile Ser Gln Asn Leu Ser Phe Lys Glu Gly
        35              40              45
Phe Lys Ile Ser Val Phe Gly Ala Ile Ala Phe Val Phe Ala Arg Thr
    50              55              60
Thr Gly Ile Val Val Asn Gln Cys Ile Asp Arg Phe Ile Asp Lys Lys
65              70              75              80
Asn Thr Arg Thr Ser Lys Arg Val Leu Pro Ala Asn Leu Val Ser Leu
            85              90              95
Asn Phe Ala Trp Val Leu Ser Leu Phe Cys Ser Phe Leu Phe Leu Phe
            100             105             110
Leu Cys Lys Ile Leu Arg Ile Phe Ser Leu Gly Ile Ala Ser Leu Thr
    115             120             125
Leu Met Ile Val Tyr Pro Tyr Met Lys Arg Val Thr Phe Phe Cys His
    130             135             140
Trp Gly Leu Gly Leu Val Tyr Thr Val Ala Ile Leu Met Asn Phe Cys
145             150             155             160
Ala Phe Ala Glu Ser Gly Leu Ser Met Arg Leu Cys Phe Leu Ala Leu
            165             170             175
Leu Trp Gly Gly Ser Val Gly Met Val Ile Ala Ala Asn Asp Ile Ile
            180             185             190
Tyr Ala Ile Glu Asp Thr Glu Phe Asp Arg Glu Glu Gly Leu Arg Ser
    195             200             205
Val Pro Ala His Tyr Gly Glu Lys Lys Ala Val Glu Ile Ala Lys Val
    210             215             220
Asn Leu Trp Val Ser Tyr Leu Ala Tyr Ile Phe Ser Gly Phe Val Gly
225             230             235             240
Ser Leu Asp Lys Glu Phe Tyr Phe Thr Ala Ile Ile Pro Leu Val Val
            245             250             255
Ile Leu Lys Val Val Arg Met Tyr Ser Asn Tyr Ser Lys Lys Asp Gln
            260             265             270
Glu Gly Glu Ser Lys Phe Phe Leu Ala Asn Ile Ala Ile Ala Leu Ser
        275             280             285
Phe Leu Val Ser Met Thr Leu Phe Trp Ser Leu Ser Arg
    290             295             300
```

<210> 268
<211> 232
<212> PRT
<213> Chlamydia pneumoniae

<400> 268

```
Ile Met Ala Leu Asp Glu Ile Asn Asn Gln Asn Asn Pro Ser Gln Gln
1               5               10              15
Ile Ala Ser Ser Thr Ser Gln Thr Ser Lys Ile Asn Gln Asp Arg Lys
            20              25              30
Thr Phe Ala Cys Thr Val Thr Leu Leu Val Val Ala Thr Leu Met Ile
        35              40              45
Leu Ser Gly Ile Val Leu Leu Phe Thr Ile Gly Ser Leu Gly Leu Ser
    50              55              60
Val Pro Leu Ser Gly Ile Leu Gly Thr Phe Ala Val Thr Val Gly Ala
65              70              75              80
Val Leu Phe Ile Thr Gly Leu Thr Ile Leu Val Arg Lys Ser Leu Gly
            85              90              95
Ile Glu Gln Lys Asn Glu Asp Leu Asn Phe Leu Lys Ile Lys Thr Pro
            100             105             110
```

```
Thr Pro Pro Ala Arg Pro Leu Met Ser Lys Phe Ser Val Thr Cys Ser
        115                 120                 125
Thr Thr Ser Ile Val Leu Gly Met Ala Leu Leu Ile Gly Ala Val Val
        130                 135                 140
Ser Val Phe Phe Leu Thr Gly Tyr Leu Gln Leu Gly Leu Cys Ala Gly
145                 150                 155                 160
Leu Val Gly Leu Gly Thr Ala Leu Phe Val Ala Gly Leu Ala Arg Met
            165                 170                 175
Ser Pro Arg Ser Leu Ala Asp Gln Glu Gly Ser Gly Ser Ala Asp Ser
            180                 185                 190
Gln Ser Asn Ile Val Gly Ile Gly Glu Pro Lys Ala Ala Gln Glu Gln
        195                 200                 205
Lys Trp Tyr Lys Met Ala Val Val Arg Gly Glu Asp Gly Ile Pro Thr
        210                 215                 220
Ala Ile Arg Leu Thr Pro Glu Lys
225                 230
```

```
        <210> 269
        <211> 263
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 269
Val Ser Ile Met Ser Leu Asn Lys Thr Asn Ala Leu Leu Asn Gln Pro
1               5                   10                  15
Glu Pro Ala Val Cys Leu Asn Ala Trp Asp Pro Lys Tyr Ile Asn Gln
        20                  25                  30
Asp Arg Lys Thr Phe Ala Cys Thr Val Thr Leu Leu Val Ile Ala Thr
        35                  40                  45
Leu Met Ile Leu Thr Thr Gly Val Ile Val Leu Leu Ala Met Gly Ser
        50                  55                  60
Pro Gly Leu Ser Val Leu Val Ser Thr Ile Ile Gly Thr Ser Val Thr
65                  70                  75                  80
Thr Leu Gly Thr Ala Leu Phe Ile Ile Gly Leu Val Lys Leu Ile Lys
                85                  90                  95
Lys Ser Leu Ala Trp Ile Gln Tyr Gln Lys Tyr Phe Gln Glu Val Val
            100                 105                 110
Lys Gln Lys Tyr Glu Pro Phe Ser Ile Pro Lys Asn Asp Asn Val His
        115                 120                 125
Lys Leu Thr Ser Cys Leu Pro Ser Pro Leu Asp Ile Glu Ser Pro Ser
        130                 135                 140
Pro Glu Ala Ser Thr Pro Val Ser Lys Leu Arg Ile Ala Cys Ser Gly
145                 150                 155                 160
Val Ala Ile Val Leu Gly Val Thr Leu Leu Ile Gly Ala Val Val Ser
            165                 170                 175
Val Phe Phe Cys Thr Gly Tyr Leu Gln Leu Ala Leu Cys Val Gly Phe
            180                 185                 190
Ala Cys Leu Gly Thr Ala Leu Phe Val Gly Gly Leu Ala Gly Leu Arg
        195                 200                 205
Thr His Ser Leu Ile Ala Gln Gly Ile Met Tyr Leu Tyr Leu Thr Tyr
        210                 215                 220
Tyr Leu Ser Ser Ala Leu Glu Glu Arg Asn Glu Thr Val Lys Asp Gln
225                 230                 235                 240
Arg Asn Glu Ile Asn Thr Tyr Leu Thr Glu Glu Cys Arg Gln Gln Lys
                245                 250                 255
Arg Glu Lys Ala Leu Leu Glu
        260
```

562

<210> 270
<211> 135
<212> PRT
<213> Chlamydia pneumoniae

<400> 270
Lys Gln Trp Ala Leu Ser Leu Met Ser Gln Cys Gln Ser Ser Ser Thr
1   5   10   15
Ser Thr Trp Glu Trp Met Lys Ser Phe Val Pro Asn Trp Lys Asn Pro
            20   25   30
Thr Pro Pro Leu Ser Pro Ile Pro Ser Glu Asp Glu Phe Ile Leu Ala
        35   40   45
Tyr Glu Pro Phe Val Leu Pro Lys Thr Asp Pro Glu Asn Ala Gln Ala
    50   55   60
Asn Pro Pro Gly Thr Ser Thr Pro Asn Val Glu Asn Gly Ile Asp Asp
65   70   75   80
Leu Asn Pro Leu Leu Gly Gln Pro Asn Glu Gln Asn Asn Ala Asn Asn
            85   90   95
Pro Gly Thr Ser Gly Ser Asn Pro Thr Ser Leu Pro Ala Pro Glu Arg
            100   105   110
Leu Pro Glu Thr Glu Glu Asn Ser Gln Glu Glu Glu Gln Gly Ser Gln
        115   120   125
Asn Asn Glu Asp Leu Ile Gly
    130   135

<210> 271
<211> 331
<212> PRT
<213> Chlamydia pneumoniae

<400> 271
Val Ala Phe Arg Cys Val Met Thr Ile Asp Met His Cys Asp Leu Leu
1   5   10   15
Ser His Pro His Phe Cys Arg Lys Asp Pro Ala Val Arg Cys Ser Pro
            20   25   30
Glu Gln Leu Leu Ser Gly Gly Val Arg Gln Gln Val Cys Ala Ile Phe
            35   40   45
Val Pro His Ser Arg Gly Glu Pro Asn Cys Asp Lys Gln Asn Ser Leu
    50   55   60
Phe Phe Ser Leu Pro Asn Gln Tyr Pro Asp Ile Gly Leu Leu Ser Tyr
65   70   75   80
Glu Glu Glu Glu Asn Gly Ser Ser Ser Gln Lys Lys Ser Leu Ser Leu
            85   90   95
Ile Arg Ser Ile Glu Asn Ala Ser Ala Leu Gly Asp Asp Thr Ala Pro
            100   105   110
Leu Gly Thr Leu Leu Ala Lys Leu Ile His Leu Thr Lys Gln Gly Pro
            115   120   125
Leu Ala Tyr Leu Gly Ile Val Trp Lys Gly Asp Asn Arg Phe Gly Gly
    130   135   140
Gly Thr Glu Ala Pro Lys Arg Leu Ser Asn Asp Gly Lys Val Leu Leu
145   150   155   160
Asp Ile Met Tyr Glu Leu Gly Val Pro Ile Asp Leu Ser His Cys Ser
                165   170   175
Asp Lys Leu Ala Glu Asp Ile Leu Asp Tyr Thr Ala Asp Lys Leu Pro
            180   185   190
Asn Leu Ala Val Ile Ala Ser His Ser Asn Phe Arg Ser Val Leu Asp
            195   200   205
His Arg Arg Asn Leu Val Asp Ala His Ala Lys Glu Ile Val Arg Arg
    210   215   220
Lys Gly Val Ile Gly Leu Asn Leu Val Arg Ser Tyr Val Gly Asp Ser
225   230   235   240

563

```
Leu Gly Asp Leu Glu Lys His Val Leu His Ala Glu Asn Leu Gly Ile
            245                 250                 255
Leu Ser Ser Ile Val Leu Gly Ser Asp Phe Phe Tyr Ala Asn Glu Asp
            260                 265                 270
Glu Asn Phe Phe Phe Asn Glu Cys Ser Ser Ala Glu Ala His Pro Val
            275                 280                 285
Leu Asn Gln Leu Ile His Arg Ile Phe Ser Lys Gly Lys Ala Glu Ser
    290                 295                 300
Ile Leu Ser Ser Arg Ala Glu Lys Phe Leu Lys Gln Val Ile Val Glu
305                 310                 315                 320
Gln Val Asn Pro Lys Ile Thr Asp Val Lys Leu
                325                 330
```

<210> 272
<211> 292
<212> PRT
<213> Chlamydia pneumoniae

<400> 272

```
Ser Ile Phe Gly Val Ile Val Pro Asp Lys Lys Ala Gln Ile Thr Phe
1               5                   10                  15
Ser Leu Pro Glu Val Met Ser Ala Ile His Gln Gly Lys Ile Val Ala
            20                  25                  30
Leu Pro Thr Asp Thr Val Tyr Gly Phe Val Leu Ser Leu Tyr Ala Ser
            35                  40                  45
Glu Ala Glu Glu Arg Leu Tyr Ala Leu Lys Asp Arg Glu Pro Ser Lys
    50                  55                  60
Ala Phe Ala Leu Tyr Val Asn Ser Ile Glu Asp Ile Glu Asn Ile Ser
65                  70                  75                  80
Gly Tyr Pro Leu Ser Pro Thr Ala Lys Lys Leu Ala Gln Leu Phe Pro
                85                  90                  95
Gly Ala Ile Thr Leu Val Val Lys His Arg Asn Pro Arg Phe Pro Lys
            100                 105                 110
Glu Thr Leu Ala Phe Arg Ile Val Asp His Ser Val Val Arg Glu Ile
            115                 120                 125
Val Asp His Cys Gly Thr Leu Ile Gly Thr Ser Ala Asn Leu Ser Glu
    130                 135                 140
Phe Pro Ser Ala Leu Thr Ala Gln Glu Ile Phe Ala Asp Phe Ala Asp
145                 150                 155                 160
His Asp Leu Cys Ile Phe Asp Gly Pro Cys Ser His Gly Leu Glu Ser
                165                 170                 175
Thr Val Val Ala Ser Asp Pro Leu Tyr Ile Tyr Arg Glu Gly Leu Ile
                180                 185                 190
Ser Arg Ser Val Ile Glu Asn Ile Ala Gly Thr Glu Ala Lys Ile Phe
            195                 200                 205
His Arg Thr Ser His Ala Phe Ser Lys His Ile Lys Ile Tyr Thr Val
    210                 215                 220
Lys Asn Gln Glu Gln Leu Val Ser Phe Leu Ser Gly Ser Leu Asp Phe
225                 230                 235                 240
Lys Gly Val Val Cys Glu His Pro Lys Pro Lys Asn Phe Tyr Thr Arg
                245                 250                 255
Leu Arg Glu Ala Leu Lys Lys Lys Thr Pro Ser Ile Val Phe Ile Tyr
            260                 265                 270
Asp Ile Asn Thr Ser Asp Tyr Pro Glu Leu Phe Pro Phe Leu Ser Pro
    275                 280                 285
Tyr Tyr Ile Glu
    290
```

<210> 273
<211> 245
<212> PRT
<213> Chlamydia pneumoniae

<400> 273

```
Lys Leu Met Thr Asp Tyr Ser Phe Phe Arg Arg Lys Ile Gly Asn Ile
1               5                   10                  15
Glu Ala Ile Glu Cys Pro Gly Asn Pro Gln Asp Pro Ile Ile Ile Leu
            20                  25                  30
Cys His Gly Tyr Gly Ser Leu Ala Asp Asn Leu Thr Phe Phe Pro Ser
            35                  40                  45
Ile Cys Ser Phe Ser Lys Leu Arg Pro Thr Trp Ile Phe Pro Asn Gly
    50                  55                  60
Ile Leu Pro Leu Glu Asn Asp Phe Arg Gly Ser Arg Ala Cys Phe Pro
65                  70                  75                  80
Leu Asn Val Leu Leu Leu Gln Glu Leu Ser Arg Leu Tyr Ala Asn Gly
                85                  90                  95
Val Gly Asn Leu Gln Glu Lys Tyr Asp Glu Leu Phe Asp Val Asp Leu
            100                 105                 110
Glu Thr Pro Lys Glu Ala Leu Glu Glu Leu Ile Leu Asn Leu Asn Arg
            115                 120                 125
Pro Tyr Asn Glu Ile Ile Ile Gly Gly Phe Ser Gln Gly Ala Ile Leu
    130                 135                 140
Ala Thr His Leu Val Leu Thr Ser Gln Asn Pro Tyr Ala Gly Ala Leu
145                 150                 155                 160
Ile Phe Ala Gly Ala Arg Leu Phe Asn Gln Gly Trp Glu Glu Gly Leu
                165                 170                 175
Lys Gln Cys Ala Gln Val Pro Phe Leu Gln Ser His Gly Tyr Glu Asp
            180                 185                 190
Glu Ile Leu Pro Tyr His Leu Gly Ala His Leu Asn Asp Leu Leu Leu
            195                 200                 205
Thr Lys Leu Asn Gly Gln Phe Val Ser Phe His Gly Gly His Glu Ile
    210                 215                 220
Pro Ser Val Val Phe Gln Lys Met Gln Val Thr Val Pro Asn Trp Ile
225                 230                 235                 240
Asp Pro Ala Arg Gly
                245
```

<210> 274
<211> 311
<212> PRT
<213> Chlamydia pneumoniae

<400> 274

```
Phe Asn Arg Gln Ser Asp Ala Thr Tyr Ala Thr Trp Val Met His Leu
1               5                   10                  15
Glu Glu Glu Asn Gln Gly Trp Glu Ala Leu Leu Arg Lys Val Tyr His
            20                  25                  30
Gln Glu Val Pro Pro Ala Ile Leu Leu His Gly Phe Thr Leu Pro Val
            35                  40                  45
Leu Gln Asp Lys Ala Glu Gln Leu Ala Ser Glu Ile Leu Leu Ser Ser
    50                  55                  60
Ser Pro Gly Ser Glu His Lys Val Ser Gln Lys Ile His Pro Asp Ile
65                  70                  75                  80
Tyr Gln Phe Phe Pro Glu Gly Lys Gly Arg Leu His Ser Ile Asp Leu
                85                  90                  95
Pro Arg Gly Ile Lys Lys Gln Ile Tyr Ile Ser Pro Phe Glu Ala Asn
            100                 105                 110
Tyr Lys Ile Tyr Ile Ile His Glu Ala Asp Arg Met Thr Leu Ala Ala
    115                 120                 125
```

```
Ile Ser Ala Phe Leu Lys Val Phe Glu Glu Pro Pro Lys His Ala Val
    130                 135                 140
Ile Ile Leu Thr Thr Ala Lys Val Gln Arg Leu Pro Lys Thr Ile Ile
145                 150                 155                 160
Ser Arg Ser Leu Ser Ile Phe Ile Glu Arg Gly Glu Lys Ile Leu Cys
                165                 170                 175
Ser Lys Glu Thr Phe Ser Tyr Leu Phe Arg Tyr Ala Gln Cys Glu Ile
            180                 185                 190
Pro Val Thr Glu Val Ser Gln Ile Ile Lys Glu Ser Ser Glu Thr Asp
        195                 200                 205
Lys Gln Val Leu Arg Asp Lys Val Gln Arg Phe Met Glu Val Leu Leu
    210                 215                 220
Glu Leu Tyr Arg Asp Arg Tyr Thr Leu Asn Leu Gly Leu Lys Ala Ser
225                 230                 235                 240
Ala Leu Asn Tyr Pro Glu His Val Lys Glu Ile Leu Gln Leu Pro Leu
                245                 250                 255
Leu Pro Leu Asp Lys Val Leu Leu Ile Val Glu Ser Ala Cys Arg Ser
            260                 265                 270
Leu Asn Asn Ser Ser Ser Ala Ala Ser Val Leu Glu Trp Val Ala Ile
        275                 280                 285
Gln Leu Val Ser Leu Gln Tyr Lys Glu Lys Glu Leu Val Ser Val Ser
    290                 295                 300
Pro Gly Gln Asp Leu Ser Asn
305                 310


        <210> 275
        <211> 209
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 275
Gly Ser Ile Val Phe Ile Val Ile Glu Gly Gly Glu Gly Ser Gly Lys
  1             5                 10                  15
Ser Ser Leu Ala Lys Ala Leu Gly Asp Gln Leu Val Ala Gln Asp Arg
            20                  25                  30
Lys Val Leu Leu Thr Arg Glu Pro Gly Gly Cys Leu Ile Gly Glu Arg
        35                  40                  45
Leu Arg Asp Leu Ile Leu Glu Pro Pro His Leu Glu Leu Ser Arg Cys
    50                  55                  60
Cys Glu Leu Phe Leu Phe Leu Gly Ser Arg Ala Gln His Ile Gln Glu
65                  70                  75                  80
Val Ile Ile Pro Ala Leu Arg Asp Gly Tyr Ile Val Ile Cys Glu Arg
                85                  90                  95
Phe His Asp Ser Thr Ile Val Tyr Gln Gly Ile Ala Glu Gly Leu Gly
            100                 105                 110
Ala Asp Phe Val Ala Asp Leu Cys Ser Lys Val Val Gly Pro Thr Pro
        115                 120                 125
Phe Leu Pro Asn Phe Val Leu Leu Leu Asp Ile Pro Ala Asp Ile Gly
    130                 135                 140
Leu Gln Arg Lys His Arg Gln Lys Val Phe Asp Lys Phe Glu Lys Lys
145                 150                 155                 160
Pro Leu Ser Tyr His Asn Arg Ile Arg Glu Gly Phe Leu Ser Leu Ala
                165                 170                 175
Ser Ala Asp Pro Ser Arg Tyr Leu Val Leu Asp Ala Arg Glu Ser Leu
            180                 185                 190
Ala Ser Leu Ile Asp Lys Val Met Leu His Thr Gln Leu Gly Leu Cys
        195                 200                 205
Thr
```

<210> 276
<211> 839
<212> PRT
<213> Chlamydia pneumoniae

<400> 276

```
Glu Ser Thr Ile Pro Met Phe Asn Lys Asp Glu Ile Ile Val Pro Lys
1               5                   10                  15
Asn Leu Glu Glu Glu Met Lys Glu Ser Tyr Leu Arg Tyr Ser Met Ser
            20                  25                  30
Val Ile Ile Ser Arg Ala Leu Pro Asp Ile Arg Asp Gly Leu Lys Pro
        35                  40                  45
Ser Gln Arg Arg Val Leu Tyr Ala Met Lys Gln Leu Ser Leu Ser Pro
    50                  55                  60
Gly Ala Lys His Arg Lys Cys Ala Lys Ile Cys Gly Asp Thr Ser Gly
65                  70                  75                  80
Asp Tyr His Pro His Gly Glu Ser Val Ile Tyr Pro Thr Leu Val Arg
            85                  90                  95
Met Ala Gln Asn Trp Ala Met Arg Tyr Pro Leu Val Asp Gly Gln Gly
            100                 105                 110
Asn Phe Gly Ser Ile Asp Gly Asp Pro Pro Ala Ala Met Arg Tyr Thr
        115                 120                 125
Glu Ala Arg Leu Thr His Ser Ala Met Tyr Leu Met Glu Asp Leu Asp
    130                 135                 140
Lys Asp Thr Val Asp Ile Val Pro Asn Tyr Asp Glu Thr Lys His Glu
145                 150                 155                 160
Pro Val Val Phe Pro Ser Lys Phe Pro Asn Leu Leu Cys Asn Gly Ser
            165                 170                 175
Ser Gly Ile Ala Val Gly Met Ala Thr Asn Ile Pro Pro His Asn Leu
        180                 185                 190
Gly Glu Leu Ile Glu Ala Thr Leu Leu Leu Leu Ala Asn Pro Gln Ala
        195                 200                 205
Ser Val Asp Glu Ile Leu Gln Val Met Pro Gly Pro Asp Phe Pro Thr
    210                 215                 220
Gly Gly Ile Ile Cys Gly Ser Glu Gly Ile Arg Ser Ala Tyr Thr Thr
225                 230                 235                 240
Gly Arg Gly Lys Ile Lys Val Arg Ala Arg Leu His Val Glu Glu Asn
            245                 250                 255
Glu Asp Lys His Arg Glu Ser Ile Ile Ile Thr Glu Met Pro Tyr Asn
            260                 265                 270
Val Asn Lys Ser Arg Leu Ile Glu Gln Ile Ala Asn Leu Val Asn Glu
        275                 280                 285
Lys Thr Leu Ala Gly Ile Ser Asp Val Arg Asp Glu Ser Asp Lys Asp
    290                 295                 300
Gly Ile Arg Val Val Leu Glu Ile Lys Lys Gly Glu Ser Ser Glu Ile
305                 310                 315                 320
Ile Ile Asn Arg Leu Tyr Lys Phe Thr Asp Val Gln Val Thr Phe Gly
            325                 330                 335
Ala Asn Met Leu Ala Leu Asp Lys Asn Leu Pro Arg Thr Met Ser Ile
            340                 345                 350
His Arg Met Ile Ser Ala Trp Ile Arg His Arg Lys Glu Val Ile Arg
        355                 360                 365
Arg Arg Thr Arg Tyr Glu Leu Asn Lys Ala Glu Thr Arg Ala His Val
    370                 375                 380
Leu Glu Gly Tyr Leu Lys Ala Leu Ser Cys Leu Asp Ala Leu Val Lys
385                 390                 395                 400
Thr Ile Arg Glu Ser Gly Asn Lys Glu His Ala Lys Glu Arg Ile Ile
            405                 410                 415
Glu Ser Phe Gly Phe Thr Glu Pro Gln Ala Leu Ala Ile Leu Glu Leu
        420                 425                 430
```

567

```
Arg Leu Tyr Gln Leu Thr Gly Leu Glu Ala Glu Lys Ile Gln Lys Glu
        435                 440                 445
Tyr Glu Glu Leu Leu Asn Lys Ile Ala Tyr Tyr Lys Gln Val Leu Ser
    450                 455                 460
Asp Glu Gly Leu Val Lys Asp Ile Ile Arg Asn Glu Leu Gln Asp Leu
465                 470                 475                 480
Leu Lys His His Lys Val Ala Arg Arg Thr Thr Ile Glu Phe Asp Ala
            485                 490                 495
Asp Asp Ile Arg Asp Ile Glu Asp Ile Ile Thr Asn Glu Ser Val Ile
            500                 505                 510
Ile Thr Ile Ser Gly Asp Asp Tyr Val Lys Arg Met Pro Val Lys Val
        515                 520                 525
Phe Lys Glu Gln Arg Arg Gly Gly His Gly Val Thr Gly Phe Asp Met
    530                 535                 540
Lys Lys Gly Ala Gly Phe Leu Lys Ala Val Tyr Ser Ala Phe Thr Lys
545                 550                 555                 560
Asp Tyr Leu Leu Ile Phe Thr Asn Phe Gly Gln Cys Tyr Trp Leu Lys
                565                 570                 575
Val Trp Gln Leu Pro Glu Gly Glu Arg Ala Lys Gly Lys Pro Ile
        580                 585                 590
Ile Asn Phe Leu Glu Gly Ile Arg Pro Gly Glu Glu Leu Ala Ala Ile
        595                 600                 605
Leu Asn Ile Lys Asn Phe Asp Asn Ala Gly Phe Leu Phe Leu Ala Thr
    610                 615                 620
Lys Arg Gly Val Val Lys Lys Val Ser Leu Asp Ala Phe Ser Asn Pro
625                 630                 635                 640
Arg Lys Lys Gly Ile Arg Ala Leu Glu Ile Asp Glu Gly Asp Glu Leu
            645                 650                 655
Ile Ala Ala Cys His Ile Val Ser Asp Glu Glu Lys Val Met Leu Phe
            660                 665                 670
Thr His Leu Gly Met Ala Val Arg Phe Pro His Glu Lys Val Arg Pro
        675                 680                 685
Met Gly Arg Thr Ala Arg Gly Val Arg Gly Val Ser Leu Lys Asn Glu
    690                 695                 700
Glu Asp Lys Val Val Ser Cys Gln Ile Val Thr Glu Asn Gln Ser Val
705                 710                 715                 720
Leu Ile Val Cys Asp Gln Gly Phe Gly Lys Arg Ser Leu Val Glu Asp
                725                 730                 735
Phe Arg Glu Thr Asn Arg Gly Gly Val Gly Val Arg Ser Ile Leu Ile
            740                 745                 750
Asn Glu Arg Asn Gly Asn Val Leu Gly Ala Ile Pro Val Thr Asp His
        755                 760                 765
Asp Ser Ile Leu Leu Met Ser Ser Gln Gly Gln Ala Ile Arg Ile Asn
    770                 775                 780
Met Gln Asp Val Arg Val Met Gly Arg Ser Thr Gln Gly Val Arg Leu
785                 790                 795                 800
Val His Leu Lys Glu Gly Asp Ala Leu Val Ser Met Glu Lys Leu Ser
            805                 810                 815
Ser Asn Glu Asn Asp Asp Glu Val Leu Ser Gly Ser Glu Glu Glu Cys
            820                 825                 830
Ser Asp Thr Val Ser Leu Arg
        835

        <210> 277
        <211> 806
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 277
Phe Met Asp Pro Lys Glu Lys Asn Tyr Asp Ala Ser Ala Ile Thr Val
 1               5                  10                  15
```

568

```
Leu Glu Gly Leu Gln Ala Val Arg Glu Arg Pro Gly Met Tyr Ile Gly
        20                  25                  30
Asp Thr Gly Ile Thr Gly Leu His His Leu Val Tyr Glu Val Val Asp
        35                  40                  45
Asn Ser Ile Asp Glu Ala Met Ala Gly Tyr Cys Ser Arg Ile Asp Val
    50                  55                  60
Arg Ile Leu Glu Asp Gly Gly Ile Val Ile Val Asp Asn Gly Arg Gly
65              70                  75                          80
Ile Pro Ile Glu Val His Glu Arg Glu Ser Ala Lys Gln Gly Arg Glu
                85                  90                  95
Val Ser Ala Leu Glu Val Val Leu Thr Val Leu His Ala Gly Gly Lys
            100                 105                 110
Phe Asp Lys Asp Ser Tyr Lys Val Ser Gly Gly Leu His Gly Val Gly
        115                 120                 125
Val Ser Cys Val Asn Ala Leu Ser Glu Lys Leu Val Ala Thr Val Phe
    130                 135                 140
Lys Asp Lys Lys Cys Tyr Gln Met Glu Phe Ser Arg Gly Ile Pro Val
145                 150                 155                 160
Thr Pro Leu Gln Tyr Val Ser Val Ser Asp Arg Gln Gly Thr Glu Ile
            165                 170                 175
Val Phe Tyr Pro Asp Pro Lys Ile Phe Ser Thr Cys Thr Phe Asp Arg
            180                 185                 190
Ser Ile Leu Met Lys Arg Leu Arg Glu Leu Ala Phe Leu Asn Arg Gly
        195                 200                 205
Ile Thr Ile Val Phe Glu Asp Asp Arg Asp Val Ser Phe Asp Lys Val
    210                 215                 220
Thr Phe Phe Tyr Glu Gly Gly Ile Gln Ser Phe Val Ser Tyr Leu Asn
225                 230                 235                 240
Gln Asn Lys Glu Ser Leu Phe Ser Glu Pro Ile Tyr Ile Cys Gly Thr
            245                 250                 255
Arg Val Gly Asp Asp Gly Glu Ile Glu Phe Glu Ala Ala Leu Gln Trp
        260                 265                 270
Asn Ser Gly Tyr Ser Glu Leu Val Tyr Ser Tyr Ala Asn Asn Ile Pro
        275                 280                 285
Thr Arg Gln Gly Gly Thr His Leu Thr Gly Phe Ser Thr Ala Leu Thr
        290                 295  ·             300
Arg Val Ile Asn Thr Tyr Ile Lys Ala His Asn Leu Ala Lys Asn Asn
305                 310                 315                 320
Lys Leu Ala Leu Thr Gly Glu Asp Ile Arg Glu Gly Leu Thr Ala Val
            325                 330                 335
Ile Ser Val Lys Val Pro Asn Pro Gln Phe Glu Gly Gln Thr Lys Gln
            340                 345                 350
Lys Leu Gly Asn Ser Asp Val Ser Ser Val Ala Gln Gln Val Val Gly
        355                 360                 365
Glu Ala Leu Thr Ile Phe Phe Glu Glu Asn Pro Gln Ile Ala Arg Met
        370                 375                 380
Ile Val Asp Lys Val Phe Val Ala Ala Gln Ala Arg Glu Ala Ala Lys
385                 390                 395                 400
Lys Ala Arg Glu Leu Thr Leu Arg Lys Ser Ala Leu Asp Ser Ala Arg
            405                 410                 415
Leu Pro Gly Lys Leu Ile Asp Cys Leu Glu Lys Asp Pro Glu Lys Cys
            420                 425                 430
Glu Met Tyr Ile Val Glu Gly Asp Ser Ala Gly Gly Ser Ala Lys Gln
        435                 440                 445
Gly Arg Asp Arg Arg Phe Gln Ala Ile Leu Pro Ile Arg Gly Lys Ile
    450                 455                 460
Leu Asn Val Glu Lys Ala Arg Leu Gln Lys Ile Phe Gln Asn Gln Glu
465                 470                 475                 480
Ile Gly Thr Ile Ile Ala Ala Leu Gly Cys Gly Ile Gly Ala Asp Asn
            485                 490                 495
```

569

Phe Asn Leu Ser Lys Leu Arg Tyr Arg Arg Ile Ile Ile Met Thr Asp
            500   505   510
Ala Asp Val Asp Gly Ser His Ile Arg Thr Leu Leu Leu Thr Phe Phe
            515   520   525
Tyr Arg His Met Thr Ala Leu Ile Glu Asn Glu Cys Val Tyr Ile Ala
        530   535   540
Gln Pro Pro Leu Tyr Lys Val Ser Lys Lys Lys Asp Phe Arg Tyr Ile
545   550   555   560
Leu Ser Glu Lys Glu Met Asp Ser Tyr Leu Leu Met Leu Gly Thr Asn
            565   570   575
Glu Ser Ser Ile Leu Phe Lys Ser Thr Glu Arg Glu Leu Arg Gly Glu
            580   585   590
Ala Leu Glu Ser Phe Ile Asn Val Ile Leu Asp Val Glu Ser Phe Ile
        595   600   605
Asn Thr Leu Glu Lys Lys Ala Ile Pro Phe Ser Glu Phe Leu Glu Met
    610   615   620
Tyr Lys Glu Gly Ile Gly Tyr Pro Leu Tyr Tyr Leu Ala Pro Ala Thr
625   630   635   640
Gly Met Gln Gly Gly Arg Tyr Leu Tyr Ser Asp Glu Glu Lys Glu Glu
            645   650   655
Ala Leu Ala Gln Glu Glu Thr His Lys Phe Lys Ile Ile Glu Leu Tyr
            660   665   670
Lys Val Ala Val Phe Val Asp Ile Gln Asn Gln Leu Lys Glu Tyr Gly
        675   680   685
Leu Asp Ile Ser Ser Tyr Leu Ile Pro Gln Lys Asn Glu Ile Val Ile
        690   695   700
Gly Asn Glu Asp Ser Pro Ser Cys Asn Tyr Ser Cys Tyr Thr Leu Glu
705   710   715   720
Glu Val Ile Asn Tyr Leu Lys Asn Leu Gly Arg Lys Gly Ile Glu Ile
            725   730   735
Gln Arg Tyr Lys Gly Leu Gly Glu Met Asn Ala Asp Gln Leu Trp Asp
            740   745   750
Thr Thr Met Asn Pro Glu Gln Arg Thr Leu Ile His Val Ser Leu Lys
        755   760   765
Asp Ala Val Glu Ala Asp His Ile Phe Thr Met Leu Met Gly Glu Glu
    770   775   780
Val Pro Pro Arg Arg Glu Phe Ile Glu Ser His Ala Leu Ser Ile Arg
785   790   795   800
Ile Asn Asn Leu Asp Ile
                    805

        <210> 278
        <211> 116
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 278
Asp Met Phe Leu Lys Arg Lys Lys Arg Gly Gly Ser Gln Val Gln Asn
1   5   10   15
Lys Arg Thr Ala Ser Pro Ile Lys His Ala Lys His Tyr Leu His Asn
            20   25   30
Tyr Leu Gln Glu Leu Gln Lys Ile Met Ala Ala Arg Pro His Asp Ala
        35   40   45
Ile Asp Ala Trp Asn Gln Val Phe Arg Asp Lys Tyr Lys Gly Met Ser
    50   55   60
Gln Ala Ile Gly Phe Arg Asp His Ile Leu Leu Val Lys Val Tyr Asn
65   70   75   80
Ser Ser Leu Tyr Ala Leu Leu Lys Gln Thr Pro Gln Asn Asp Leu Ile
            85   90   95
Met Ser Leu Tyr Gln Val Ala Ser His Val Gln Ile Arg Glu Ile Gln
            100   105   110

                            570

Phe Leu Leu Gly
        115

        <210> 279
        <211> 200
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 279
Asn Ile Ser Ile Phe Tyr Pro Lys Tyr Phe Ile Glu Gly Lys Glu Val
1   5   10   15
Leu Ile Lys Asn Leu Pro Pro Leu Ile Phe Tyr Gly Val Ile Leu Met
            20   25   30
Ile Ile Asn Val Arg Ala Pro Ala Phe Gly Ile Thr Ser Val Gln Gln
        35   40   45
Phe Ser Thr Asn Phe Gln Ala Ala Ile Pro Ile Leu Asn Ile Val Ile
    50   55   60
Gly Cys Ser Arg Ile Ser Ser Thr Tyr Ala Glu Asp Ile Glu Glu Val
65   70   75   80
Ala Gln Glu Lys Leu Glu Lys Ser Thr His Ser Lys Ser Ser Thr Ser
            85   90   95
Val Asn Leu Trp Ala His Arg Val Arg Gly Val Val Glu Ile Leu Gly
            100   105   110
Gly Gly Ile Val Ile Leu Ala Leu Glu Ile Thr Ala Leu Val Leu Gln
        115   120   125
Val Ile Ile Lys Leu Ile Lys Cys Leu Ile Asp Val Leu Cys Val Cys
    130   135   140
Leu Phe Gly Leu Gly Val Cys Val Val Ala Ile Ile Gly Ala Ile Ala
145   150   155   160
Phe Cys Val Val Val Val Val Lys Tyr Leu Gly Phe Cys Ser Gln Gly
            165   170   175
Glu Glu Leu Glu Pro Ile Glu Val Lys Thr Leu Ile Ser Pro Asp Lys
            180   185   190
Pro Tyr Pro Thr Val Val Tyr Val
        195   200

        <210> 280
        <211> 275
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 280
Arg Asp Ser Met Lys Lys Lys Leu Ser Leu Leu Val Gly Leu Ile Phe
1   5   10   15
Val Leu Ser Ser Cys His Lys Glu Asp Ala Gln Asn Lys Ile Arg Ile
            20   25   30
Val Ala Ser Pro Thr Pro His Ala Glu Leu Leu Glu Ser Leu Gln Glu
        35   40   45
Glu Ala Lys Asp Leu Gly Ile Lys Leu Lys Ile Leu Pro Val Asp Asp
    50   55   60
Tyr Arg Ile Pro Asn Arg Leu Leu Leu Asp Lys Gln Val Asp Ala Asn
65   70   75   80
Tyr Phe Gln His Gln Ala Phe Leu Asp Asp Glu Cys Glu Arg Tyr Asp
            85   90   95
Cys Lys Gly Glu Leu Val Val Ile Ala Lys Val His Leu Glu Pro Gln
            100   105   110
Ala Ile Tyr Ser Lys Lys His Ser Ser Leu Glu Arg Leu Lys Ser Gln
        115   120   125
Lys Lys Leu Thr Ile Ala Ile Pro Val Asp Arg Thr Asn Ala Gln Arg
        130   135   140

571

```
Ala Leu His Leu Leu Glu Glu Cys Gly Leu Ile Val Cys Lys Gly Pro
145                 150             155                 160
Ala Asn Leu Asn Met Thr Ala Lys Asp Val Cys Gly Lys Glu Asn Arg
            165             170                 175
Ser Ile Asn Ile Leu Glu Val Ser Ala Pro Leu Leu Val Gly Ser Leu
            180             185                 190
Pro Asp Val Asp Ala Ala Val Ile Pro Gly Asn Phe Ala Ile Ala Ala
        195             200                 205
Asn Leu Ser Pro Lys Lys Asp Ser Leu Cys Leu Glu Asp Leu Ser Val
    210             215                 220
Ser Lys Tyr Thr Asn Leu Val Val Ile Arg Ser Glu Asp Val Gly Ser
225             230                 235                 240
Pro Lys Met Ile Lys Leu Gln Lys Leu Phe Gln Ser Pro Ser Val Gln
            245             250                 255
His Phe Phe Asp Thr Lys Tyr His Gly Asn Ile Leu Thr Met Thr Gln
            260             265                 270
Asp Asn Gly
        275


        <210> 281
        <211> 224
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 281
Lys Lys Ile Met Gln Ser Asp Leu Ile Gln Ile Leu Leu Lys Glu Thr
1               5               10                  15
Val Asn Thr Leu Tyr Met Val Ser Thr Ala Phe Phe Phe Ser Cys Ala
            20              25                  30
Ile Gly Gly Met Leu Gly Leu Gly Leu Phe Cys Thr Ser Pro Lys Ser
        35              40              45
Leu Asn Pro Lys Lys Ser Leu Tyr Ala Thr Ile Ser Met Ile Leu Ser
    50              55              60
Phe Leu Thr Ala Ile Pro Phe Ala Ile Leu Ile Val Ile Leu Phe Pro
65              70              75                  80
Ile Thr Arg Trp Ile Val Gly Thr Ser Leu Gly Pro Thr Ala Ser Ile
            85                  90                  95
Val Pro Leu Thr Ile Gly Ala Ile Pro Phe Val Val Thr Ile Val Val
        100             105                 110
Asp Ala Phe Arg Asn Ser Ala Leu Asn Tyr Leu Glu Ser Ala Val Ala
    115             120                 125
Leu Gly Ile Pro Lys Arg Asn Ile Leu Phe Gly Ile Leu Leu Pro Glu
    130             135                 140
Ser Tyr Pro Gln Leu Ile Phe Ser Leu Lys Ser Leu Val Val His Leu
145             150                 155                 160
Ile Ser Cys Ser Thr Leu Ala Gly Phe Val Gly Gly Gly Gly Leu Gly
            165             170                 175
Gln Leu Leu Leu Gln Tyr Gly Tyr Tyr Arg Phe Glu Trp Ser Val Thr
            180             185                 190
Thr Ser Val Leu Val Ile Thr Leu Val Leu Ile Glu Ser Val Arg Ile
    195             200                 205
Leu Gly Asp Phe Trp Gly Arg Arg Val Leu Lys Tyr Arg Gly Ile Leu
    210             215                 220

        <210> 282
        <211> 348
        <212> PRT
        <213> Chlamydia pneumoniae
```

```
        <400> 282
Ile Lys Gly Glu Ala Trp Leu Val Ser Glu Gln His Ser Pro Ile Ile
1               5                   10                  15
Ser Val Gln Asp Val Ser Lys Lys Leu Gly Asp His Ile Leu Leu Ser
            20                  25                  30
Lys Val Ser Phe Ser Val Tyr Pro Gly Glu Val Phe Gly Ile Val Gly
            35                  40                  45
His Ser Gly Ser Gly Lys Thr Thr Leu Leu Arg Cys Leu Asp Phe Leu
        50                  55                  60
Asp Met Pro Thr Ser Gly Ser Ile Ser Val Ala Gly Phe Asp Asn Ser
65                  70                  75                  80
Leu Pro Thr Gln Lys Phe Ser Arg Arg Asn Phe Ser Lys Lys Val Ala
                85                  90                  95
Tyr Ile Ser Gln Asn Tyr Gly Leu Phe Ser Ser Lys Thr Val Phe Glu
            100                 105                 110
Asn Ile Ala Tyr Pro Leu Arg Ile His His Ser Glu Met Ser Lys Ser
            115                 120                 125
Glu Val Glu Glu Gln Val Tyr Asp Thr Leu Asn Phe Leu Asn Leu Tyr
        130                 135                 140
His Arg His Asp Ala Tyr Pro Gly Asn Leu Ser Gly Gly Gln Lys Gln
145                 150                 155                 160
Lys Val Ala Ile Ala Arg Ala Ile Val Cys Gln Pro Glu Val Val Leu
                165                 170                 175
Cys Asp Glu Ile Thr Ser Ala Leu Asp Pro Lys Ser Thr Glu Asn Ile
            180                 185                 190
Ile Glu Arg Leu Leu Gln Leu Asn Gln Glu Arg Gly Ile Thr Leu Val
        195                 200                 205
Leu Val Ser His Glu Ile Asp Val Val Lys Lys Ile Cys Ser His Val
    210                 215                 220
Leu Val Met His Gln Gly Ala Val Glu Glu Leu Gly Thr Thr Glu Glu
225                 230                 235                 240
Leu Phe Leu Asn Ser Glu Asn Ser Ile Thr Asn Glu Leu Phe His Glu
                245                 250                 255
Asp Ile Asn Ile Ala Ala Leu Ser Ser Cys Tyr Phe Ala Glu Asp Arg
            260                 265                 270
Glu Glu Val Leu Arg Leu Asn Phe Ser Lys Glu Leu Ala Ile Gln Gly
            275                 280                 285
Ile Ile Ser Lys Val Ile Gln Thr Gly Leu Val Ser Ile Asn Ile Leu
        290                 295                 300
Ser Gly Asn Ile Asn Leu Phe Arg Lys Ser Pro Met Gly Phe Leu Ile
305                 310                 315                 320
Ile Val Leu Glu Gly Glu Val Glu Gln Arg Lys Lys Ala Lys Glu Leu
                325                 330                 335
Leu Ile Glu Leu Gly Val Val Ile Lys Glu Phe Tyr
                340                 345


        <210> 283
        <211> 357
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 283
Ile Ser Leu Arg Arg His Thr Leu Met Leu Asn Ile His Asp Ile Leu
1               5                   10                  15
Gly Asn Asp Asp Glu Asn Leu Leu Ser Tyr Gln Cys Lys His Ile Thr
            20                  25                  30
Lys Asp Lys Leu Thr Leu Pro Ser His Asp Phe Val Asp Lys Val Phe
            35                  40                  45
Gly Leu Ser Asp Arg Asn Asn Arg Val Leu Arg Ser Leu Gln Thr Met
        50                  55                  60
```

573

Phe Ser His Gly Arg Leu Ala Asn Ser Gly Tyr Leu Ser Ile Leu Pro
65   70   75   80
Val Asp Gln Gly Ile Glu His Ser Ala Gly Ala Ser Phe Ala Ile Asn
              85   90   95
Pro Ile Tyr Phe Asp Pro Glu Asn Ile Val Lys Leu Ala Ile Glu Ser
          100   105   110
Gly Cys Ser Ala Val Ala Ser Thr Tyr Gly Thr Leu Ser Leu Leu Ser
          115   120   125
Arg Lys Tyr Ala His Lys Ile Pro Phe Met Leu Lys Leu Asn His Asn
      130   135   140
Glu Leu Leu Ser Tyr Pro Thr Lys Tyr His Gln Ile Phe Phe Thr Gln
145   150   155   160
Val Glu Ala Ala Tyr Ser Met Gly Ala Val Ala Val Gly Ala Thr Val
              165   170   175
Tyr Phe Gly Ser Glu Thr Ser Asn Glu Glu Ile Val Ala Val Ser Asn
          180   185   190
Ala Phe Ala Lys Ala Arg Ser Leu Gly Leu Ala Thr Val Leu Trp Cys
          195   200   205
Tyr Leu Arg Asn Pro Ala Phe Val Ala Asn Gly Val Asp Tyr His Thr
      210   215   220
Ala Ala Asp Leu Thr Gly Gln Ala Asp His Leu Gly Ala Thr Leu Gly
225   230   235   240
Ala Asp Ile Val Lys Gln Lys Leu Pro Thr Cys Gln Gly Gly Phe Lys
              245   250   255
Ala Ile Asn Phe Gly Lys Thr Asp Glu Arg Val Tyr Ser Glu Leu Ser
          260   265   270
Ser Asn His Pro Ile Asp Leu Cys Arg Tyr Gln Val Leu Asn Ser Tyr
      275   280   285
Cys Gly Lys Val Gly Leu Ile Asn Ser Gly Gly Pro Ser Gly Lys Asn
      290   295   300
Asp Phe Thr Glu Ala Ala Arg Thr Ala Val Ile Asn Lys Arg Ala Gly
305   310   315   320
Gly Met Gly Leu Ile Leu Gly Arg Lys Ala Phe Gln Arg Pro Leu Ser
              325   330   335
Glu Gly Ile Gln Leu Leu Asn Leu Val Gln Asp Ile Tyr Leu Asp Pro
          340   345   350
Asn Ile Thr Ile Ala
          355

          <210> 284
          <211> 482
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 284
Ile Leu Ile Leu Gln Ser Leu Asn Phe Ser Lys Lys Val Phe Met His
1   5   10   15
Ser His Ser Lys Pro Thr Lys Pro Leu Gly Thr Phe Thr Val Gly Met
              20   25   30
Leu Ser Leu Ala Val Val Ile Ser Leu Arg Asn Leu Pro Leu Thr Ala
          35   40   45
Lys His Gly Leu Ser Thr Leu Phe Phe Tyr Gly Leu Ala Val Ile Cys
      50   55   60
Phe Met Ile Pro Tyr Ala Leu Ile Ser Ala Glu Leu Ala Ser Phe Lys
65   70   75   80
Pro Gln Gly Ile Tyr Ile Trp Ala Arg Asp Ala Leu Gly Lys Trp Trp
              85   90   95
Gly Phe Phe Ala Ile Trp Met Gln Trp Phe His Asn Met Thr Trp Tyr
          100   105   110
Pro Ala Val Leu Ala Phe Ile Ala Ser Thr Ile Val Tyr Lys Ile Asn
          115   120   125

```
Pro Glu Leu Ala His Asn Lys Val Tyr Ile Ala Thr Val Ile Leu Ala
    130                 135                 140
Gly Phe Trp Ile Leu Thr Phe Phe Asn Phe Leu Gly Ile Thr Ser Ser
145                 150                 155                 160
Ala Leu Phe Ser Ser Ile Cys Val Ile Ile Gly Thr Leu Ile Pro Gly
                165                 170                 175
Val Ile Leu Val Ser Leu Ala Leu Phe Trp Ile Phe Ser Gly Asn Pro
                180                 185                 190
Ile Ala Ile Ser Leu Ser Trp Gly Asn Leu Leu Pro Asn Phe Ser Asn
            195                 200                 205
Val Ser Ser Leu Val Leu Leu Ala Gly Met Leu Leu Ala Leu Cys Gly
    210                 215                 220
Leu Glu Ala Asn Ala Asn Leu Ala Ser Asp Met Val Asn Pro Arg Lys
225                 230                 235                 240
Asn Tyr Pro Lys Ala Val Phe Ile Gly Ala Ile Ala Thr Leu Thr Ile
                245                 250                 255
Leu Val Leu Gly Ser Leu Ser Ile Ala Ile Val Ile Pro Lys Glu Glu
                260                 265                 270
Ile Ser Leu Val Ser Gly Leu Val Lys Thr Phe Thr Leu Phe Phe Asp
        275                 280                 285
Lys Tyr Asn Leu Ser Trp Met Thr Gly Ile Val Val Val Met Thr Ile
    290                 295                 300
Ala Gly Ser Leu Gly Glu Leu Asn Ala Trp Met Phe Ala Gly Thr Lys
305                 310                 315                 320
Gly Leu Phe Ile Ser Thr Gln Asn Asp Cys Leu Pro Arg Leu Phe Lys
                325                 330                 335
Lys Val Asn Ser Lys Asn Val Pro Thr Asn Leu Met Leu Phe Gln Gly
                340                 345                 350
Ile Val Val Thr Ile Phe Thr Leu Leu Phe Leu Cys Leu Asp Ser Ala
        355                 360                 365
Asp Leu Val Tyr Trp Ile Leu Thr Ala Leu Ser Val Gln Met Tyr Leu
    370                 375                 380
Ala Met Tyr Ile Cys Leu Phe Leu Ala Gly Pro Ile Leu Arg Ile Lys
385                 390                 395                 400
Glu Pro Arg Ala Gln Arg Leu Tyr Ser Val Pro Gly Lys Phe Leu Gly
                405                 410                 415
Ile Cys Thr Met Ser Ile Leu Gly Ile Leu Ser Cys Ala Phe Ala Leu
                420                 425                 430
Trp Val Ser Phe Leu Pro Pro Arg Glu Leu Ala Gln Ile Ser Glu Gly
            435                 440                 445
Ser Lys Ile Gly Tyr Thr Thr Phe Leu Leu Leu Ala Phe Ser Leu Asn
    450                 455                 460
Cys Leu Ile Pro Phe Gly Ile Tyr Phe Thr His Lys Arg Leu Ser Lys
465                 470                 475                 480
Lys Ser
```

```
        <210> 285
        <211> 350
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 285
```
```
Gly Arg Arg Leu Ser Tyr Phe Gln Asp Leu Ile Lys Asn Ala Val Ala
1                   5                   10                  15
Lys Ile Ile Ser Phe Arg Lys Ser Pro Pro Asn Pro Val Lys Leu Leu
            20                  25                  30
Ile Lys Phe Ala Lys Lys Asp Leu Lys Asn Ser Ser Ile Ala Pro Leu
        35                  40                  45
Tyr Glu Val Leu Leu Glu Ile Leu Glu Ala Pro Gly Glu Glu Ile Leu
    50                  55                  60
```

```
Glu Val Leu Phe Ser Leu Asp Pro Met Trp Leu Lys Ser Met Leu Asp
65              70              75              80
Pro Lys Lys His Ser Thr Leu Gly Ile Glu Ile Ser Ser Glu Thr Ala
            85              90              95
Glu Thr Ile Glu Ser Cys Ser Leu Gly Leu Ile Ser Ile Asn Leu Leu
            100             105             110
Leu Ser Gly Leu Cys Leu Arg Ser Ser His Asp Arg Ser Gln Ala Val
        115             120             125
Lys Ile Ile Gln Gln Phe Cys Pro Gln Phe Ser Ser Glu Glu Val Gln
    130             135             140
Asn Phe Val Glu Gln Arg Asn Ile Leu Thr Pro Phe Leu His His Leu
145             150             155             160
Phe Glu Gly Asp Glu Val Ala Leu Leu Asn Gln Leu Ser Leu Arg Leu
            165             170             175
Asp Leu Ile Val Pro Asn Ala Leu Tyr Pro Glu Pro Asp Pro Ser Cys
            180             185             190
Trp Gln Ser Ile Asn Ser Glu Asp Cys Ala Lys Asp Ala Glu Asp Gln
            195             200             205
Gln Glu Asp Phe Asn Lys Thr Lys Glu Ala Cys Lys Glu Gly Leu Lys
    210             215             220
Lys Leu Val Leu Pro Ala Leu Ser Ile Thr Ser Ile Pro Gln Leu Leu
225             230             235             240
Arg Ala Arg Arg Phe Lys Gln Gly Ala Glu Ile Leu Met Ala Ile Asp
            245             250             255
Arg Lys Lys Met Lys Gln Asn Pro Phe Ile Phe Leu Glu Ala Leu Leu
            260             265             270
Glu Ser Glu Glu Phe Ser Ile Ser Val Gly Lys Tyr Leu Lys Leu Leu
    275             280             285
Met Pro Ile His Leu Trp Asp Lys Leu Leu His Ala Ile Tyr Leu Gly
    290             295             300
Tyr Phe Gln Thr Gly Leu Ile Cys Gln Gly Glu Ile Glu Thr Phe Cys
305             310             315             320
Arg Arg Ala Asn Leu Asn Pro Glu Ala Phe Gln Ala Ala Ile Gln Gln
            325             330             335
Gly Arg Leu Leu Ser Phe Leu Phe Pro Lys Met Leu Leu Asp
            340             345             350

        <210> 286
        <211> 168
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 286
Phe Leu Asp Met Asn Ile Pro Ala Pro Gln Val Pro Val Ile Asp Glu
1               5               10              15
Pro Val Val Asn Asn Thr Ser Ser Tyr Gly Leu Ser Leu Lys Ser Ser
            20              25              30
Leu Arg Pro Ile Thr Tyr Leu Ile Leu Ala Ile Leu Ala Ile Ala Thr
        35              40              45
Leu Met Ser Val Leu Tyr Phe Cys Gly Ile Ile Ser Val Gly Thr Phe
        50              55              60
Val Leu Gly Met Leu Ile Pro Leu Ser Val Cys Ser Val Leu Cys Val
65              70              75              80
Ala Tyr Leu Phe Tyr Gln Gln Ser Ser Ile Glu Lys Thr Lys Val Phe
            85              90              95
Ser Ile Thr Ser Pro Ser Val Phe Phe Ser Asp Glu Asp Leu Asn Leu
            100             105             110
Leu Leu Gly Arg Glu Glu Asp Ser Val Ser Ala Ile Asp Glu Leu Leu
        115             120             125
Lys Asn Phe Pro Ala Asp Asp Phe Arg Arg Pro Lys Met Leu Pro Tyr
    130             135             140
```

576

Ser Asn Phe Leu Asp Glu Gln Gly Arg Pro Asn Glu Ser Arg Glu Glu
145   150   155   160
Asp Ser His Thr Ser Lys Ile Leu
                165

        <210> 287
        <211> 517
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 287
Lys Glu Leu Phe Asn Leu Phe Phe Phe Thr Ala Asn Lys Glu Thr Thr
1   5   10   15
Ala Ser His Glu Leu Ile Tyr Arg Lys Asn Gln Ser Phe Ser Leu Ser
            20   25   30
Pro Val Thr Ile Leu Cys Leu Leu Ala Ile Ser Val Leu Leu Leu Leu
            35   40   45
Gly Val Val Phe Ala Leu Val Gly Cys His Val Leu Ala Ala Pro Leu
        50   55   60
Gly Leu Leu Val Trp Gly Cys Ala Ala Ser Val Cys Ser Met Met Ala
65   70   75   80
Ile Val Ser Leu Met Cys Leu Tyr Lys Gly Gly Lys Pro Leu Ile Glu
                85   90   95
Pro Ser Asn Glu Glu Lys Ile Asp Pro Thr Lys Asp Leu Glu Ile Lys
            100   105   110
Asp Pro Glu Ser Leu Lys Pro Val Pro Val Glu Gly Gln Ser Leu Pro
            115   120   125
Lys Glu Arg Lys Thr Val Ser Phe Lys Ala Lys Ile Pro Ser Ile Val
    130   135   140
Glu Asp Asp Phe Lys Pro Tyr Val Ile Gln Ser Thr Phe Tyr His Gln
145   150   155   160
Asn Lys Val Tyr Ser Lys Pro Ile Ala Glu Arg Met Gln Ser Leu Glu
                165   170   175
Lys Glu Ile Thr Thr Leu Ile Val Asp Phe Pro Arg Ala Leu Glu Glu
            180   185   190
Ser Ser Lys Ser Ser Gly Ser Leu Leu Arg Gly Val Ile Ser Glu Ile
        195   200   205
Lys Asn Leu Phe Leu Pro Arg Phe Leu Ser Arg Lys Val Lys Tyr Ser
    210   215   220
Leu Thr Ala Cys Leu Arg Arg Leu Gly Ser Ile Val Glu Glu Tyr Ala
225   230   235   240
Ser Ser Asp Leu Leu Ile Leu Leu Leu Thr Lys Pro Glu Pro Leu Asn
            245   250   255
Met Val Thr Gln Gln Leu Ile Ala His Leu Asn Ser Leu Lys Thr Glu
            260   265   270
Lys Arg Lys Leu Thr Pro His Met Gln Lys Leu Val Leu Ser Ile Asn
    275   280   285
Phe Trp Phe Tyr Gly Trp Ser Leu Glu Glu Lys Cys Ile Glu Lys Ile
    290   295   300
Val Ala Tyr Asp Pro Asn Leu Leu Thr Asp Glu Leu Lys Ala His Leu
305   310   315   320
Glu Ala Gly Asn Ile Val Gln Phe Leu Leu Ser Phe Gln Ser Ser Glu
            325   330   335
Met Gln Arg Glu Phe Arg Ala Leu Phe Pro Ser Asp Ala Gln Glu Leu
            340   345   350
Pro Ser Ala Lys Asp Gly Ser Asn Tyr Val Pro Ala Ile Asn Ser Ser
            355   360   365
Glu Tyr Met Tyr Asp Phe Lys Asp Leu Ser Val Leu Lys Lys Ser Leu
    370   375   380
Ser Glu Arg Leu Ala Phe Cys Glu Lys Ile Pro Ser Pro Ser Ser Trp
385   390   395   400

577

Asn Phe Thr Ser Ser Val Ala Ser His Tyr Lys Asp Phe Ser Leu Leu
            405   410   415
Phe Thr Phe Phe Ser Asn Gln Gln Ser Val Ile Leu Gln Asn Pro Phe
            420   425   430
Leu Leu Ile Glu Leu Leu His Glu Asn Pro Lys Cys Gln Thr Phe Leu
            435   440   445
Lys Gly Leu Leu Glu Lys Ala Met Pro Met Ser Asn Trp Ala Ala Leu
    450   455   460
Phe Arg Pro Met Leu Met Gly Met Leu Cys Ser Gly Ile Ala Arg Lys
465   470   475   480
Lys Glu Leu Lys Ile Ile Ala Glu His Leu Gly Val Pro Phe Lys Glu
                485   490   495
Ile Thr Gln Ala Ile Ala Ser Gly Lys Ile Leu Asp Leu Leu Leu Gln
            500   505   510
His Leu Phe Asp Phe
        515

        <210> 288
        <211> 500
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 288
Ser Cys Arg Glu Ser Lys Gly Lys Ile Met Val Gly Glu Gln Asn Arg
1   5   10   15
Asn Glu Glu Lys Leu Asp Thr Ala Phe Ser Ser Gly Asn Leu Met Asp
            20   25   30
Ser Arg Thr Ser His Leu Asp Asp Glu Leu Ser Phe Lys Leu Glu Lys
        35   40   45
Ala Phe Thr Cys Leu Ser Thr Asp Ile His Ser His Asp Leu Ser Lys
    50   55   60
Ile Val Ile Glu Tyr Asn Pro Ile Asp Leu Ala Tyr Ala Val Ser Cys
65   70   75   80
Leu Pro Ser Glu Ser Arg Ala Ile Leu Tyr Lys Asn Leu Ser Cys Ile
                85   90   95
Thr Ala Lys Val Ala Phe Ile Ile Asn Thr Asp Ser Ala Ser Arg Trp
            100   105   110
Ala Ile Phe Arg Arg Leu Ser Asp Ser Glu Val Cys Ala Leu Ile Glu
            115   120   125
Gln Met Pro Pro Asp Glu Ala Val Trp Val Leu Asp Asp Ile Pro Asp
    130   135   140
Arg Arg Tyr Arg Arg Ile Leu Glu Leu Ile Asp Ser Lys Lys Ala Leu
145   150   155   160
Lys Ile Arg Asp Leu Gln Lys His Gly Arg Asn Thr Ala Gly Arg Leu
                165   170   175
Met Thr Asn Glu Phe Phe Ala Phe Leu Met Glu Thr Thr Val Lys Asp
                180   185   190
Val Ser Ala Cys Ile Arg Ser Asn Pro Gly Ile Asp Leu Thr Arg Leu
    195   200   205
Val Phe Val Leu Asp Phe Lys Gly Glu Leu Gln Gly Val Val Thr Asp
    210   215   220
Arg Ser Leu Ile Ile Asn Pro Pro Glu Met Ser Leu Lys Gln Ile Met
225   230   235   240
Asn Gln Ile Glu His Lys Val Leu Pro Asp Ala Thr Arg Glu Glu Val
                245   250   255
Val Asp Leu Val Glu Arg Tyr Lys Ile Ala Ala Leu Pro Val Val Asp
                260   265   270
Glu Glu Asn Phe Leu Ile Gly Ala Ile Thr Tyr Glu Asp Val Val Glu
            275   280   285
Ala Ile Glu Asp Ile Ala Asp Glu Thr Ile Ala Arg Met Ala Gly Thr
    290   295   300

578

```
Thr Glu Asp Val Gly Tyr Gln Thr Cys His Val Val Gln Arg Phe Leu
305             310             315                 320
Leu Arg Ala Pro Trp Leu Leu Val Thr Leu Phe Ala Gly Leu Ile Ser
            325             330                 335
Ala Ser Val Met Ala Tyr Phe Gln Lys Ile Ser Pro Ala Leu Leu Ala
            340             345                 350
Leu Ile Ile Phe Phe Ile Pro Leu Ile Asn Gly Met Ser Gly Asn Val
        355             360                 365
Gly Val Gln Cys Ser Thr Ile Leu Val Arg Ser Met Ala Thr Gly Thr
        370             375                 380
Leu Ser Phe Gly Arg Arg Arg Glu Thr Ile Phe Lys Glu Met Ser Ile
385             390             395                 400
Gly Leu Leu Thr Gly Val Val Leu Gly Ile Leu Cys Gly Leu Val Val
            405             410                 415
Tyr Leu Met Gly Phe Leu Gly Leu Asn Ile Phe Ser Gly Gly Gly Ile
            420             425                 430
Gln Leu Gly Val Thr Val Ala Thr Gly Val Leu Gly Ala Ser Leu Thr
        435             440                 445
Ala Thr Thr Leu Gly Val Leu Ser Pro Phe Phe Phe Ala Lys Leu Gly
        450             455                 460
Val Asp Pro Ala Leu Ala Ser Gly Pro Ile Val Thr Ala Leu Asn Asp
465             470             475                 480
Ile Met Ser Met Ile Ile Phe Phe Leu Ile Ala Gly Gly Ile Asn Phe
            485             490                 495
Leu Phe Phe Asn
            500


        <210> 289
        <211> 714
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 289
Arg Arg Cys Met Ile Arg Ser Pro Leu Pro Phe Ile Ser Ser Lys Arg
1               5               10              .   15
Ala Leu Asn Met Leu Gly Leu Gln Asp Glu Phe Ser Cys Pro Glu Asp
            20              25              30
Val Val Asp Phe Leu Phe Ser Glu Ile Glu Leu Leu Ala Gln Gln Asp
            35              40              45
Glu Pro Ser Glu Gly Tyr Leu Ala Leu Ser Arg Ser Leu Leu Met Met
    50              55              60
Thr His Asn His Pro Lys Val Val Lys Arg Val Ile Phe Tyr Gly Val
65              70              75                  80
Ser Tyr Gly Leu Lys His Lys Ser Met Ser Ile Phe Ile Asp Val Leu
            85              90                  95
Thr Tyr Ile Asp Phe Leu Phe Glu Lys Leu Gly Ile Ser Ala Ser Asp
            100             105             110
Arg Leu Ser Leu Cys Ser Ala Arg Thr Cys Ile Asn Phe Glu Leu Tyr
            115             120             125
Ser Gln Thr Gly Glu Met Lys Phe Leu Ser Glu Val Val Asp Asn Phe
    130             135             140
Arg Leu Ile Glu Gln Leu Leu Lys Met His Pro Gln Leu Lys Asn Arg
145             150             155                 160
Leu Gly Trp Glu His Phe Arg Ile Gly Ala Lys Gln Glu Glu Val Ser
            165             170             175
Leu Val Ala Ser Ala Ser Val Tyr Gln Ala Val Gly Arg Ser Phe Ile
            180             185             190
Glu Leu Tyr His Lys His Leu Glu Leu Ser Asp Leu Ala Cys Gly Met
            195             200             205
Lys Cys Leu Ala Leu Ala Leu Asp Leu Ser Pro Asn Asn Ala His Ile
210             215             220
```

579

```
His Ala Asp Tyr Ala Lys Gly Leu Val Val Leu Gly Thr Arg Gln Gly
225                 230                 235                 240
Lys Ser Leu Leu Ile Glu Arg Gly Met Glu His Phe Ser Lys Ala Ile
                245                 250                 255
Phe Leu Ser Phe Ser Arg Asp Gly Asp Thr Leu Ala Tyr Gln Asn Tyr
            260                 265                 270
Arg Tyr Ser Tyr Ala Leu Ala Ser Val Lys Leu Phe Asp Leu Thr Tyr
        275                 280                 285
Lys Lys Glu His Phe Asp Gln Ala Met Asn Ile Leu Tyr Gln Thr Val
    290                 295                 300
Gln Ala Phe Pro Asn Leu Ser Gly Leu Trp Met Val Trp Gly Glu Leu
305                 310                 315                 320
Leu Ile Arg Ser Gly Trp Leu Asn Ser Asn Met Lys Tyr Ile Glu Val
                325                 330                 335
Gly Leu Glu Lys Leu Ala Ser Leu Gln Lys Lys Thr Asn Asp Pro Ile
            340                 345                 350
Ala Leu Ser Gly Leu Leu Ala Thr Gly Ile Ala Ile Leu Gly Leu Tyr
            355                 360                 365
Leu Glu Glu Pro Asn Leu Phe Lys Asp Ser Arg His Arg Leu Ile Ser
    370                 375                 380
Ala Met Arg Thr Phe Pro Gly Asn Ser Ala Leu Val His Ala Leu Gly
385                 390                 395                 400
Val Val Gln Leu Cys Ser Ala Leu Tyr Phe Asn Glu Asp Ser His Phe
            405                 410                 415
Ala Ser Ala Ile Ser Cys Phe Gln Ser Cys Leu Glu Trp Asp Leu Asp
            420                 425                 430
Ala Thr Gly Met Trp Gln Lys Leu Phe Asp Ala Tyr Phe Ser Trp Gly
        435                 440                 445
Ile Lys Lys Lys Ser Ala Arg Leu Leu Arg Lys Ala Val Asp Val Ala
    450                 455                 460
Ser Arg Leu Cys Ser Leu Arg Pro Glu Ala Phe Leu Phe Trp Ser Asp
465                 470                 475                 480
Arg Gly Leu Ala Leu Lys Cys Leu Ala Glu Ala Thr Ile Asp Glu Ala
            485                 490                 495
Tyr Lys Glu Ile Phe Leu Ser Glu Ser Leu Leu His Tyr Gln Arg Ala
            500                 505                 510
Trp Asp Leu Ser Gly Arg Leu Glu Ile Leu Glu Leu Trp Gly Gln Ser
        515                 520                 525
His Tyr Leu Leu Ala Glu Leu Gln Gln Ser Leu Phe His Tyr Asp Glu
    530                 535                 540
Ala Tyr Thr Leu Leu Thr Lys Val Asp Leu Thr Leu Ser Ser Ser Arg
545                 550                 555                 560
Val Lys Leu Ile Leu Ala Ala Val Leu Leu Gly Lys Gly Arg Leu Leu
            565                 570                 575
Gln Asp Thr Asp Pro Ala Glu Glu Ala Arg Glu Ile Leu Glu Pro Leu
            580                 585                 590
Val Glu Val Tyr Leu Glu Asp Glu Asn Phe Leu Leu Leu Leu Gly Lys
        595                 600                 605
Val Tyr Leu Phe Leu Phe Trp Lys Asn Lys Asn Val Cys Leu Gly Lys
    610                 615                 620
Leu Ala Arg Thr Tyr Leu Glu Lys Ala Thr Ser Leu Gly Cys Pro Glu
625                 630                 635                 640
Ala Tyr Tyr Thr Leu Gly Lys Phe Tyr Ala Val Ile Lys Asp Val Asn
            645                 650                 655
Lys Ala Trp Gly Met Val Ile Arg Ser Ala Gln Tyr Gly Val Arg Ile
            660                 665                 670
Thr Glu Ala Lys Trp Leu Asn Asp Pro Tyr Leu Ala Asn Leu Arg Glu
        675                 680                 685
Ile His Ala Phe Arg Glu Val Val Glu Asn Gln Lys Gly Arg Leu Trp
    690                 695                 700
```

580

```
Leu Gly Asn Lys Thr Glu Met Lys Arg Asn
705                      710


        <210> 290
        <211> 405
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 290
Ile Ser Ile Thr Ile Arg Glu Phe Leu Phe Phe Gly Phe Glu Cys Arg
1               5                   10                  15
Ala Lys Phe Tyr Asn Val Ile Met Ser Cys Phe Asn Leu Thr Ser Thr
            20                  25                  30
Asn Glu Ser Leu Arg Pro Ile Ser Pro Lys Ala Ser Phe Pro Lys Gln
        35                  40                  45
Gly Trp Gln Ser Tyr Phe Arg Ser Ala Leu Arg Lys His Arg Ser Asp
    50                  55                  60
Thr Leu Ser Val Ser Val Cys Lys Val Asn Lys Tyr Asp Ala Asn Leu
65                  70                  75                  80
Phe Val Arg Leu Thr Val Ile Ala Leu Ala Val Val Gly Val Leu Ile
                85                  90                  95
Leu Phe Ser Ile Met Leu Ala Ser Ile Gln Gly Thr Leu Val Ile Thr
            100                 105                 110
Ser Trp Pro Leu Val Thr Ala Ala Ile Leu Ile Pro Thr Ile Leu Leu
        115                 120                 125
Thr Gly Gly Met Tyr Ile Leu His Arg Leu Gly Lys Lys Val Asp Val
    130                 135                 140
Ile Ser Gly Val Cys Ile Pro Pro Phe Ser Arg Arg Cys Trp Val Pro
145             150                 155                 160
Ile Ser Ser Ser His Thr Leu Glu Lys Phe Asp Glu Lys His Val Ser
                165                 170                 175
Ala Cys Ser Tyr Leu Asp Ile Ser Thr Leu Ser Ala Asp Gly Ser Gly
            180                 185                 190
Ile Ala Ala Val Tyr Gln Cys Pro Pro Leu Leu Phe Arg Ala Phe Pro
        195                 200                 205
Cys Phe Gly Ile Pro Cys Ala Met Pro Phe Val Ala Leu Leu Arg Met
    210                 215                 220
Ile Tyr Asn Leu Ile Arg Phe Leu Val Val Pro Phe Tyr Ile Ile Phe
225             230                 235                 240
Arg Met Ile Tyr Glu His Phe Phe Cys Lys His Leu Pro Glu Asp Asp
            245                 250                 255
Arg Phe Ile Tyr Lys Asp Val Ala Arg Glu Met Gly Arg Ser Leu Ala
            260                 265                 270
Ala Phe Leu Lys Ala Pro Phe Tyr Ala Ser Ala Cys Met Ile Gly Ala
        275                 280                 285
Phe Tyr Ser Leu Leu Asp Pro Leu Ala Gly Arg Val Leu Met Gly Ser
    290                 295                 300
Val Glu Arg Asp Trp Asn Asp Asn Val Ile Leu Ala Arg Ser Val Ser
305             310                 315                 320
Leu Ala Asn Glu Ala His Ser Leu Phe Arg Phe Glu Gly Gly Gly Gly
            325                 330                 335
Arg Lys Gly Leu Gly Gln His Ala Phe Tyr Leu Met Leu Cys Cys Gln
            340                 345                 350
Pro Gln Ser Val Phe Leu Phe Asp Lys Gly Glu Ile Val Ser Gly Ala
        355                 360                 365
His Pro Ser Ile Gln Leu Pro Glu Arg Arg Gly Leu Asp Thr Ser Gly
    370                 375                 380
Arg Tyr Pro His Ile Ser Val Ile Pro Asp Ser Gly Asn Asp Ser Ala
385             390                 395                 400
Lys Asn Phe Ile Val
                405
```

581

<210> 291
<211> 400
<212> PRT
<213> Chlamydia pneumoniae

<400> 291

```
Asn Phe Asn Arg Leu Met Lys Lys Gln Arg Ser His Tyr Lys Lys Asn
1               5                   10                  15
Asn Leu Leu Leu Leu Leu Ser Ile Leu Val Gly Leu Gly Leu Gly Ser
                20                  25                  30
Val Gln Ser Pro Trp Ile Val Tyr Ser Ala Glu Cys Ile Ala Asn Thr
            35                  40                  45
Phe Leu Lys Phe Leu Arg Leu Leu Ser Ile Pro Leu Val Phe Cys Ala
        50                  55                  60
Leu Gly Ser Thr Ile Thr Ser Ile Gln Asn Phe Asn Thr Met Val Thr
65                  70                  75                  80
Leu Gly Lys Arg Ile Leu Tyr Tyr Thr Leu Leu Thr Thr Val Ile Ala
                85                  90                  95
Ala Ser Ile Gly Leu Leu Leu Phe Phe Leu Leu Arg Pro Gln Met Ile
                100                 105                 110
Thr Gln Asp Ala Leu Ala Thr Thr Thr Lys Cys Asn Pro Leu Gly Tyr
            115                 120                 125
Leu Asp Val Leu Ser Asp Thr Leu Pro Glu Asn Ile Phe Lys Pro Phe
        130                 135                 140
Leu Gln Gly Asn Val Ile Ser Ala Ala Cys Leu Ala Val Leu Leu Gly
145                 150                 155                 160
Thr Ala Ser Leu Phe Leu Gln Glu Lys Glu Lys His Phe Val Asn Gln
                165                 170                 175
Phe Phe Asn Ser Phe Phe Ser Ile Phe Leu Asn Leu Ala Arg Gly Gly
            180                 185                 190
Leu Lys Leu Leu Pro Ile Ala Met Leu Gly Phe Ser Val Ile Leu Phe
        195                 200                 205
Lys Glu Leu Lys Asp Gln Ser Asn Leu Thr Met Phe Ala Glu Tyr Leu
        210                 215                 220
Leu Cys Val Ile Gly Ala Asn Leu Ala Gln Gly Phe Ile Val Leu Pro
225                 230                 235                 240
Ile Leu Leu Lys Ile Asn Lys Val Ser Pro Leu Lys Val Ala Lys Ala
                245                 250                 255
Met Ser Pro Ala Leu Val Thr Ala Phe Phe Ser Lys Ser Ser Ala Ala
                260                 265                 270
Thr Leu Pro Leu Thr Met Glu Leu Ala Glu Asp Asp Leu Lys Ile Asn
            275                 280                 285
Lys Asn Leu Ser Arg Phe Ser Phe Pro Leu Cys Ser Val Ile Asn Met
        290                 295                 300
Asn Gly Cys Ala Ala Phe Ile Leu Ile Thr Val Leu Phe Val Ala Thr
305                 310                 315                 320
Ser Asn Gly Met Ile Ile Ser Pro Leu Met Ser Leu Gly Trp Ile Phe
                325                 330                 335
Ile Ala Thr Leu Ala Ala Ile Gly Asn Ala Gly Val Pro Met Gly Cys
            340                 345                 350
Tyr Phe Leu Thr Leu Ser Leu Leu Thr Ser Met Asn Val Pro Leu Ser
            355                 360                 365
Ile Leu Gly Leu Ile Leu Pro Phe Tyr Thr Val Ile Asp Met Ile Glu
        370                 375                 380
Thr Ser Leu Asn Val Trp Ser Asp Cys Cys Val Val Ser Leu Ala Asn
385                 390                 395                 400
```

<210> 292
<211> 499
<212> PRT
<213> Chlamydia pneumoniae

582

<400> 292

```
Arg Ser Ala Leu Thr Met Asn Lys Lys His Ala Ser Phe Ser Ser Arg
1               5                   10                  15
Leu Gly Phe Ile Phe Ser Met Ile Gly Ile Ala Val Gly Ala Gly Asn
            20                  25                  30
Ile Trp Arg Phe Pro Arg Val Ala Ala Gln Asn Gly Gly Gly Ala Phe
        35                  40                  45
Leu Ile Leu Trp Leu Cys Phe Leu Phe Leu Trp Ser Ile Pro Leu Ile
    50                  55                  60
Ile Ile Glu Leu Ser Ile Gly Lys Leu Thr Lys Lys Ala Pro Ile Gly
65                  70                  75                  80
Ala Leu Ile Lys Thr Ala Gly Lys Lys Phe Ala Trp Ala Gly Gly Phe
            85                  90                  95
Ile Thr Leu Val Thr Thr Cys Ile Leu Ala Tyr Tyr Ser Thr Ile Val
            100                 105                 110
Gly Trp Gly Leu Ser Tyr Phe Tyr Tyr Ala Val Ser Gly Lys Ile His
        115                 120                 125
Leu Gly Asn Asp Phe Ala Lys Leu Trp Thr Ser His Tyr Gln Ser Ser
    130                 135                 140
Ile Pro Leu Trp Ala His Leu Thr Ser Leu Gly Leu Ala Tyr Leu Val
145                 150                 155                 160
Ile Arg Lys Gly Ile Val His Gly Ile Glu Lys Cys Asn Lys Ile Leu
            165                 170                 175
Ile Pro Ala Phe Phe Leu Cys Thr Ile Ala Leu Leu Leu Arg Ala Val
            180                 185                 190
Thr Leu Pro Gly Ala Val Gln Gly Ile Lys Gln Leu Phe Ser Cys Asp
        195                 200                 205
Lys Ser Cys Phe Ser Asn Tyr Lys Val Trp Ile Glu Ala Leu Thr Gln
    210                 215                 220
Asn Ala Trp Asp Thr Gly Ala Gly Trp Gly Leu Leu Leu Val Tyr Ala
225                 230                 235                 240
Gly Phe Ala Ser Lys Lys Thr Gly Val Val Ser Asn Gly Ala Leu Thr
            245                 250                 255
Ala Ile Cys Asn Asn Leu Val Ser Leu Ile Met Gly Ile Ile Ile Phe
            260                 265                 270
Ser Thr Cys Ala Ser Leu Asp Ile Leu Gly Thr Thr Gln Leu Gln Asp
    275                 280                 285
Gly Ala Gly Ala Ser Ser Ile Gly Ile Thr Phe Ile Tyr Leu Pro Glu
    290                 295                 300
Leu Phe Thr Arg Leu Pro Gly Gly Ile Tyr Leu Thr Thr Leu Phe Ser
305                 310                 315                 320
Ser Ile Phe Phe Leu Ala Phe Ser Met Ala Ala Leu Ser Ser Met Ile
            325                 330                 335
Ser Met Leu Phe Leu Leu Ser Gln Thr Leu Ala Glu Phe Gly Ile Lys
            340                 345                 350
Pro Tyr Ile Ser Glu Thr Leu Ala Thr Ile Ile Ala Phe Val Leu Gly
        355                 360                 365
Ile Pro Ser Ala Leu Ser Leu Thr Phe Phe Ser Asn Gln Asp Thr Val
    370                 375                 380
Trp Gly Val Ala Leu Ile Val Asn Gly Leu Ile Phe Ile Tyr Ala Ala
385                 390                 395                 400
Leu Val Tyr Gly Phe Pro Lys Leu Lys Lys Glu Val Ile Asn Ala Ala
            405                 410                 415
Pro Gly Asp Leu Arg Leu Asn Lys Ala Phe Asp Tyr Ile Ile Lys Tyr
        420                 425                 430
Leu Leu Pro Ile Glu Gly Ile Leu Leu Leu Gly Trp Tyr Phe Tyr Glu
        435                 440                 445
Gly Leu Phe Pro Glu Asn Gly Gln Trp Trp Asn Pro Ile Ser Leu Tyr
    450                 455                 460
Ser Leu Gly Ser Leu Val Leu Gln Trp Ser Leu Gly Leu Ile Ile Leu
465                 470                 475                 480
```

583

Trp Lys Phe Asn Lys Gln Leu Tyr Leu Arg Phe Ser Arg Tyr Asn His
                485   490   495
Glu Ile Leu

        <210> 293
        <211> 179
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 293
Glu Lys His Met Ser Ala Pro Ile Pro Thr Pro Gln Glu Leu Ser Asp
1   5   10   15
Gln Ile Thr Cys Leu Asn Val Gln Tyr Gln Gln Val Ser Glu Leu Ala
                20   25   30
Arg Glu Asn Lys Gly Asp Ile Glu Gly Leu Lys Thr Leu Thr Ala Ala
            35   40   45
Leu Thr Ala Asp Ala Gly Ile Gln Pro Ser Ala Asp Glu Ile Tyr Ser
        50   55   60
Leu Gln Thr Ala Ala Ala Leu Ile Leu Ser Ala Ser Glu Lys Pro Gly
65   70   75   80
Ser Gly Pro Ser Gly Ser Thr Glu Gly Ser Val Thr Val Gln Ser Pro
                85   90   95
Cys Lys Phe Lys Lys Val Leu Ala Val Val Leu Thr Ile Ile Ala Leu
            100   105   110
Ile Ala Ile Ala Val Leu Ile Ala Cys Ile Ile Ala Ala Cys Gly Gly
            115   120   125
Phe Pro Leu Leu Leu Ser Ala Leu Asn Leu Tyr Thr Ile Gly Ala Cys
    130   135   140
Val Ser Leu Pro Ile Ile Ala Ser Thr Ser Val Ala Leu Ile Cys Leu
145   150   155   160
Cys Thr Phe Val Ala Asn Ser Leu Ile Lys Pro Val Ile Thr Val Arg
                165   170   175
Thr Thr Arg

        <210> 294
        <211> 212
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 294
Val Lys Asn Thr Lys Asn Ser Asp Phe Met Thr Ser Pro Ile Pro Phe
1   5   10   15
Gln Ser Ser Gly Asp Ala Ser Phe Leu Ala Glu Gln Pro Gln Gln Leu
                20   25   30
Pro Ser Thr Ser Glu Ser Gln Leu Val Thr Gln Leu Leu Thr Met Met
            35   40   45
Lys His Thr Gln Ala Leu Ser Glu Thr Val Leu Gln Gln Gln Arg Asp
        50   55   60
Arg Leu Pro Thr Ala Ser Ile Ile Leu Gln Val Gly Gly Ala Pro Thr
65   70   75   80
Gly Gly Ala Gly Ala Pro Phe Gln Pro Gly Pro Ala Asp Asp His His
                85   90   95
His Pro Ile Pro Pro Pro Val Val Pro Ala Gln Ile Glu Thr Glu Ile
            100   105   110
Thr Thr Ile Arg Ser Glu Leu Gln Leu Met Arg Ser Thr Leu Gln Gln
        115   120   125
Ser Thr Lys Gly Ala Arg Thr Gly Val Leu Val Val Thr Ala Ile Leu
    130   135   140

                            584

```
Met Thr Ile Ser Leu Leu Ala Ile Ile Ile Ile Ile Leu Ala Val Leu
145             150             155             160
Gly Phe Thr Gly Val Leu Pro Gln Val Ala Leu Leu Met Gln Gly Glu
                165             170             175
Thr Asn Leu Ile Trp Ala Met Val Ser Gly Ser Ile Ile Cys Phe Ile
                180             185             190
Ala Leu Ile Gly Thr Leu Gly Leu Ile Leu Thr Asn Lys Asn Thr Pro
            195             200             205
Leu Pro Ala Ser
        210


            <210> 295
            <211> 928
            <212> PRT
            <213> Chlamydia pneumoniae


            <400> 295
Val Trp Ser Met Gln Arg Val Leu Arg Leu Leu Phe Asn Leu His His
  1           5             10              15
Gly Glu Glu Lys Arg Ala Phe Leu Phe Phe Leu Leu Gly Leu Val Trp
            20              25              30
Gly Ile Gly Cys Tyr Gly Thr Leu Ser Leu Ala Glu Gly Leu Phe Ile
        35              40              45
Glu Lys Leu Gly Ser Ala Glu Leu Pro Lys Ile Tyr Leu Gly Ser Ser
    50              55              60
Leu Ile Leu Cys Val Leu Ser Ser Leu Ile Leu Tyr Asn Leu Phe Lys
65              70              75              80
Lys His Ile Ser Ala Thr Ala Leu Phe Leu Ile Pro Val Ser Leu Ser
                85              90              95
Ile Leu Cys Asn Phe Tyr Leu Ile Leu Ser Ser Ile Phe Ala Ile Asp
            100             105             110
Pro Pro Arg Ser Pro Leu Phe Phe Tyr Arg Ile Val Ile Trp Ser Leu
        115             120             125
Thr Ile Leu Ser Tyr Thr Ser Phe Trp Gly Phe Val Asp Gln Phe Phe
    130             135             140
Asn Leu Gln Asp Gly Lys Arg His Phe Cys Ile Phe Asn Ala Ile Ile
145             150             155             160
Phe Leu Gly Asp Ala Ile Gly Ser Gly Ile Ile Ala Ser Leu Val His
                165             170             175
Thr Ile Gly Ile Gln Gly Ile Leu Ile Leu Phe Thr Ala Ala Leu Val
                180             185             190
Leu Thr Phe Pro Ile Val Phe Tyr Val Ser Lys Ser Leu Lys Ser Leu
            195             200             205
Ser Asp Asp His Asp Leu Phe Ile Asp Thr Gly His Pro Pro Pro Leu
    210             215             220
Ser Lys Ala Leu Lys Leu Cys Phe Tyr Asp Lys Tyr Thr Phe Tyr Leu
225             230             235             240
Leu Cys Phe Tyr Phe Leu Met Gln Leu Leu Ala Ile Ala Thr Glu Phe
                245             250             255
Asn Tyr Leu Lys Ile Phe Glu Ile Gln Phe Ala Ser Lys Glu Glu Phe
            260             265             270
Glu Leu Val Ala His Ile Gly Lys Cys Ser Leu Trp Ile Ser Leu Gly
            275             280             285
Asn Met Cys Phe Ala Leu Phe Ala Tyr Ser Arg Ile Val Lys Arg Leu
    290             295             300
Gly Val Asn Asn Ile Ile Leu Phe Ala Pro Leu Cys Phe Leu Ser Leu
305             310             315             320
Phe Leu Phe Trp Thr Phe Lys Thr Thr Leu Ser Ile Ala Val Leu Ala
            325             330             335
Met Val Val Arg Glu Gly Val Thr Tyr Ala Leu Asp Asp Asn Asn Leu
          340             345             350


                        585
```

Gln Leu Leu Ile Tyr Gly Val Pro Asn Lys Ile Arg Asn Gln Ile Arg
355   360   365
Ile Val Val Glu Ser Phe Ile Glu Pro Ile Gly Met Leu Val Trp Ser
370   375   380
Leu Ile Cys Phe Leu Ser Ser Gln Gln Tyr Val Phe Cys Leu Ile Ile
385   390   395   400
Ser Leu Ile Ala Thr Ile Leu Val Cys Leu Val Arg Ser Tyr Tyr Ala
405   410   415
Lys Ala Ile Leu Lys Asn Leu Ser Ala Gln Ala Leu Gln Leu Thr Arg
420   425   430
Ser Met Gln Asp Trp Ile Lys Ser Met Thr Val Lys Gln Lys Arg Gln
435   440   445
Val Glu Leu Phe Leu Leu Ala His Leu Lys His Pro Ser Glu Arg His
450   455   460
Gln Thr Phe Ala Phe Gln His Leu Leu Asn Leu Ala Ser Arg Ser Val
465   470   475   480
Leu Pro Ser Leu Leu Ala His Met Asn Lys Leu Ser Leu Pro Asn Lys
485   490   495
Leu Lys Thr Ile Glu Met Val Lys Ser Ser Leu Trp Ala Lys Asp Phe
500   505   510
Leu Thr Leu Glu Leu Leu Lys Arg Trp Thr Ser Ile Phe Pro His Pro
515   520   525
Ala Ile Ala Ser Ala Ile His Leu Tyr Phe Ala Glu His Asp Leu Leu
530   535   540
His Ile Thr His Ile Ala Glu Asp Leu Tyr Asp Thr Val Gly Asp Arg
545   550   555   560
Leu Leu Ala Ala Ile Leu Thr Val Arg Arg Gln Glu Ala Tyr Gly Pro
565   570   575
Tyr Arg Asp Leu Ala Asp Lys Arg Leu Lys Glu Leu Leu Asn Ser Asp
580   585   590
Gln Pro Glu Asp Ile Val Met Gly Leu Thr Ile Leu Lys Leu Glu Lys
595   600   605
Asn Pro Gln Asn Phe Pro Ile Leu Leu Asp Phe Leu Asn Thr Lys Asn
610   615   620
Glu Asp Ile Leu Ile Val Thr Cys Lys Ala Leu His Thr Ser Val Arg
625   630   635   640
Ala Asn His Lys Pro Tyr Cys Pro Glu Leu Leu Lys Arg Leu Arg Gln
645   650   655
Cys Ser His Asn Asp Glu Ala Ser Gln Tyr Leu Leu Lys Thr Ile Ser
660   665   670
Ile Ala Leu Asp Ile Ser Phe Val Lys Asp Leu Leu Met Thr Thr Ser
675   680   685
Gln Leu Lys Asn Thr Ser Arg Lys Tyr Ala Glu Ala Met Ile Gly Glu
690   695   700
Leu Asp Lys Glu Val Ala Pro Ala Phe Leu Gln Val Leu Thr Asp Glu
705   710   715   720
Gly Thr His Asn Arg Cys Arg Ile Leu Ala Ala Lys Ala Leu Cys Lys
725   730   735
Ile Asp Asn Trp Leu Leu Lys Lys His Ala Tyr Lys Ile Val Lys Ser
740   745   750
Lys Ala Ser Lys Ala Leu Phe Tyr Ser Tyr His Gly His Tyr Ile Gln
755   760   765
Lys Lys Tyr Pro Thr Tyr Asn Leu Ser Leu Leu Ala Asn Thr Leu Asn
770   775   780
Ser Asn Tyr Tyr Ala Glu Val Asn Phe Met Leu Ser Leu Leu Gly Ile
785   790   795   800
Leu Gly Ser Met Glu His Ser Gly Val Leu Ile Arg Ala Leu Thr Ser
805   810   815
Lys Asn Gln Lys Ile Lys Ala Gln Ala Leu Glu Ser Leu Glu Lys Asn
820   825   830

586

Cys Asp Ser His Leu Phe Ser Leu Leu Glu Pro Phe Val Asn Gln Pro
    835   840   845

Gly Met Cys Tyr Ser Glu Lys Tyr Tyr Phe Lys Cys Gly Val Ile Pro
850   855   860

Leu Thr Leu Lys Glu Leu Leu Asn Met Met Glu Asn Ser Pro Ser Ser
865   870   875   880

Leu Asn Lys Leu Thr Ala Gln Gln Leu Lys Glu Glu Leu Ser Tyr Cys
                885   890   895

Asp Pro Asp Phe Gln Ser Val Asn Thr Ile Tyr Asn Gln Glu His Glu
        900   905   910

Asp Phe Arg Thr Glu Glu Ser Glu Thr Leu Ile Ser Phe Leu Ser Ile
    915   920   925

<210> 296
<211> 142
<212> PRT
<213> Chlamydia pneumoniae

<400> 296
Ile Arg Asn Phe Phe Met Asn Leu Ile Asp Arg Ala Phe Leu Leu Lys
1   5   10   15

Lys Thr Ile Ile Phe Gln Ser Leu Asp Met Asp Leu Leu Leu Thr Ile
            20   25   30

Ala Asp Lys Thr Glu Thr Ile Ile Phe Lys Pro Gly Ser Asn Val Phe
        35   40   45

Ser Ile Gly Gln Pro Gly Phe Ser Phe Tyr Ile Ile Val Glu Gly Tyr
    50   55   60

Ile Thr Ile Ser Lys Glu Lys Leu Glu Ser Pro Leu Asn Leu Lys Pro
65   70   75   80

Leu Asp Cys Phe Gly Glu Glu Ser Leu Phe Asn Asn Lys Pro Arg Glu
                85   90   95

Tyr Asn Ala Ser Ala Asn Thr Gln Val Arg Met Leu Val Leu Ser Lys
            100   105   110

Gly Gln Ile Leu Asn Ile Val Glu Glu Cys Pro Ser Val Ala Leu Ser
        115   120   125

Phe Leu Glu Leu Tyr Ala Lys Gln Ile Lys Phe Arg Glu Pro
    130   135   140

<210> 297
<211> 80
<212> PRT
<213> Chlamydia pneumoniae

<400> 297
Ala Met Ser Leu Glu Asp Asp Val Ile Ala Ile Ile Val Glu Gln Leu
1   5   10   15

Gly Val Asp Pro Lys Glu Val Asn Glu Asn Ser Ser Phe Ile Glu Asp
            20   25   30

Leu Asn Ala Asp Ser Leu Asp Leu Thr Glu Leu Ile Met Thr Leu Glu
        35   40   45

Glu Lys Phe Ala Phe Glu Ile Ser Glu Glu Asp Ala Glu Lys Leu Arg
    50   55   60

Thr Val Gly Asp Val Phe Thr Tyr Ile Lys Lys Arg Gln Ala Glu Gln
65   70   75   80

<210> 298
<211> 257
<212> PRT
<213> Chlamydia pneumoniae

587

<400> 298

Lys Ile Pro Ile Arg Gly Met Ile Cys Met Asp Ile Thr Leu Val Gly
1   5   10   15
Lys Lys Val Ile Val Thr Gly Gly Ser Arg Gly Ile Gly Leu Gly Ile
            20   25   30
Val Lys Leu Phe Leu Glu Asn Gly Ala Asp Val Glu Ile Trp Gly Leu
        35   40   45
Asn Glu Glu Arg Gly Gln Ala Val Ile Glu Ser Leu Thr Gly Leu Gly
        50   55   60
Gly Glu Val Ser Phe Ala Arg Val Asp Val Ser His Asn Gly Gly Val
65   70   75   80
Lys Asp Cys Val Gln Lys Phe Leu Asp Lys His Asn Lys Ile Asp Ile
                85   90   95
Leu Val Asn Asn Ala Gly Ile Thr Arg Asp Asn Leu Leu Met Arg Met
            100   105   110
Ser Glu Asp Asp Trp Gln Ser Val Ile Ser Thr Asn Leu Thr Ser Leu
            115   120   125
Tyr Tyr Thr Cys Ser Ser Val Ile Arg His Met Ile Lys Ala Arg Ser
            130   135   140
Gly Ser Ile Ile Asn Val Ala Ser Ile Val Ala Lys Ile Gly Ser Ala
145   150   155   160
Gly Gln Thr Asn Tyr Ala Ala Ala Lys Ala Gly Ile Ile Ala Phe Thr
            165   170   175
Lys Ser Leu Ala Lys Glu Val Ala Ala Arg Asn Ile Arg Val Asn Cys
            180   185   190
Leu Ala Pro Gly Phe Ile Glu Thr Asp Met Thr Ser Val Leu Asn Asp
            195   200   205
Asn Leu Lys Ala Glu Trp Leu Lys Ser Ile Pro Leu Gly Arg Ala Gly
            210   215   220
Thr Pro Glu Asp Val Ala Arg Val Ala Leu Phe Leu Ala Ser Gln Leu
225   230   235   240
Ser Ser Tyr Met Thr Ala Gln Thr Leu Val Val Asp Gly Gly Leu Thr
                245   250   255
Tyr

<210> 299
<211> 317
<212> PRT
<213> Chlamydia pneumoniae

<400> 299

Ser Arg Ser Asn Lys Asp Asp Asn Phe Met Lys Lys Arg Tyr Ala Phe
1   5   10   15
Leu Phe Pro Gly Gln Gly Ser Gln Tyr Val Gly Met Gly Gln Asp Leu
            20   25   30
Tyr Met Glu Tyr Pro Glu Val Arg Glu Leu Phe Asp Phe Ala Asn Glu
        35   40   45
Arg Leu Gly Phe Ser Leu Thr Ser Ile Met Phe Glu Gly Pro Glu Asp
        50   55   60
Leu Leu Met Glu Thr Val His Ser Gln Leu Ala Ile Tyr Leu His Ser
65   70   75   80
Met Ala Val Val Lys Val Leu Ser Gln Arg Ser Ser Ile Gln Pro Ser
                85   90   95
Leu Val Ser Gly Leu Ser Leu Gly Glu Tyr Thr Ala Leu Val Ala Ser
            100   105   110
Asp Arg Ile Ser Val Leu Asp Gly Leu Glu Leu Val Arg Lys Arg Gly
            115   120   125
Gln Leu Met Asn Glu Ala Cys Asn Gln Ser Pro Gly Ala Met Ala Ala
            130   135   140

588

```
Leu Leu Gly Leu Pro Ser Glu Val Ile Glu Glu Asn Ile Thr Ser Leu
145             150                 155                 160
Gly Gln Gly Ile Trp Ile Ala Asn Tyr Asn Ala Pro Lys Gln Leu Val
            165                 170                 175
Val Ala Gly Ile Ala Glu Lys Val Asp Gln Ala Ile Glu Leu Phe Arg
            180                 185                 190
Asp Leu Gly Cys Lys Lys Ala Val Arg Leu Lys Val Ser Gly Ala Phe
        195                 200                 205
His Thr Pro Leu Met Gln Val Ala Gln Asp Gly Leu Ala Pro Asp Ile
    210                 215                 220
Tyr Ala Leu Cys Met Lys Asp Ser Ser Leu Pro Leu Val Ser His Val
225             230                 235                 240
Val Gly Lys Ser Leu Val Asn Thr Glu Glu Met Arg Glu Cys Leu Ala
            245                 250                 255
Arg Gln Met Thr Ser Pro Thr Leu Trp Tyr Gln Ser Cys Tyr His Ile
            260                 265                 270
Glu Ser Glu Val Asp Glu Phe Leu Glu Leu Gly Pro Gly Lys Val Leu
        275                 280                 285
Ala Gly Leu Asn Arg Ser Ile Gly Ile Ser Lys Pro Ile Thr Ser Leu
    290                 295                 300
Gly Thr Phe Ala Gln Ile Glu Lys Phe Leu Ser Glu Val
305                 310                 315


        <210> 300
        <211> 342
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 300
Tyr Thr Ser Phe Phe Leu Tyr Met Trp Phe Ser Val Asn Lys Asn Lys
1               5                   10                  15
Lys Ala Ala Ile Trp Ala Thr Gly Ser Tyr Leu Pro Glu Lys Val Leu
            20              25                  30
Ser Asn Ala Asp Leu Glu Lys Met Val Asp Thr Ser Asp Glu Trp Ile
        35                  40                  45
Val Thr Arg Thr Gly Ile Lys Glu Arg Arg Ile Ala Gly Pro Gln Glu
    50                  55                  60
Tyr Thr Ser Leu Met Gly Ala Ile Ala Ala Glu Lys Ala Ile Ala Asn
65                  70                  75                  80
Ala Gly Leu Ser Lys Asp Gln Ile Asp Cys Ile Ile Phe Ser Thr Ala
            85                  90                  95
Ala Pro Asp Tyr Ile Phe Pro Ser Ser Gly Ala Leu Ala Gln Ala His
            100                 105                 110
Leu Gly Ile Glu Asp Val Pro Thr Phe Asp Cys Gln Ala Ala Cys Thr
    115                 120                 125
Gly Tyr Leu Tyr Gly Leu Ser Val Ala Lys Ala Tyr Val Glu Ser Gly
    130                 135                 140
Thr Tyr Asn His Val Leu Leu Ile Ala Ala Asp Lys Leu Ser Ser Phe
145             150                 155                 160
Val Asp Tyr Thr Asp Arg Asn Thr Cys Val Leu Phe Gly Asp Gly Gly
            165                 170                 175
Ala Ala Cys Val Ile Gly Glu Ser Arg Pro Gly Ser Leu Glu Ile Asn
            180                 185                 190
Arg Leu Ser Leu Gly Ala Asp Gly Lys Leu Gly Glu Leu Leu Ser Leu
        195                 200                 205
Pro Ala Gly Gly Ser Arg Cys Pro Ala Ser Lys Glu Thr Leu Gln Ser
    210                 215                 220
Gly Lys His Phe Ile Ala Met Glu Gly Lys Glu Val Phe Lys His Ala
225             230                 235                 240
Val Arg Arg Met Glu Thr Ala Ala Lys His Ser Ile Ala Leu Ala Gly
            245                 250                 255
```

589

```
Ile Gln Glu Glu Asp Ile Asp Trp Phe Val Pro His Gln Ala Asn Glu
            260             265             270
Arg Ile Ile Asp Ala Leu Ala Lys Arg Phe Glu Ile Asp Glu Ser Arg
        275             280             285
Val Phe Lys Ser Val His Lys Tyr Gly Asn Thr Ala Ala Ser Ser Val
        290             295             300
Gly Ile Ala Leu Asp Glu Leu Val His Thr Glu Ser Ile Lys Leu Asp
305             310             315             320
Asp Tyr Leu Leu Leu Val Ala Phe Gly Gly Gly Leu Ser Trp Gly Ala
                325             330             335
Val Val Leu Lys Gln Val
            340
```

        <210> 301
        <211> 230
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 301
```
Arg Lys Lys Leu Val Tyr Tyr Ser Glu Ser Leu Tyr Ser Asn Leu Asn
1               5               10              15
Leu Gly Pro Arg Pro Glu Cys Lys Asn Lys Ile His Ile Thr Met Thr
            20              25              30
Arg Tyr Pro Asp Tyr Leu Ser Lys Leu Ile Phe Phe Leu Arg Lys Leu
        35              40              45
Pro Gly Ile Gly Phe Lys Thr Ala Glu Lys Leu Ala Phe Glu Leu Ile
        50              55              60
Ser Trp Asp Ser Glu Gln Leu Lys Ile Leu Gly Asn Ala Phe His Asn
65              70              75              80
Val Ala Ser Glu Arg Ser His Cys Pro Leu Cys Phe Thr Leu Lys Glu
                85              90              95
Ser Lys Glu Ala Asp Cys His Phe Cys Arg Glu Glu Arg Asp Asn Gln
            100             105             110
Ser Leu Cys Ile Val Ala Ser Pro Lys Asp Val Phe Phe Leu Glu Arg
        115             120             125
Ser Lys Val Phe Lys Gly Arg Tyr His Val Leu Gly Ser Leu Leu Ser
        130             135             140
Pro Ile Thr Gly Lys His Ile Glu Asn Glu Arg Leu Ser Ile Leu Lys
145             150             155             160
Ser Arg Ile Glu Thr Leu Cys Pro Lys Glu Ile Ile Leu Ala Ile Asp
            165             170             175
Ala Thr Leu Glu Gly Asp Ala Thr Ala Leu Phe Leu Lys Gln Glu Leu
            180             185             190
Gln His Phe Ser Val Asn Ile Ser Arg Leu Ala Leu Gly Leu Pro Ile
            195             200             205
Gly Leu Ser Phe Asp Tyr Val Asp Ser Gly Thr Leu Ala Arg Ala Phe
        210             215             220
Ser Gly Arg His Ser Tyr
225                 230
```

        <210> 302
        <211> 795
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 302
```
Gly Arg Leu Leu Gly Met Leu Ile Met Arg Asn Lys Val Ile Leu Gln
1               5               10              15
Ile Ser Ile Leu Ala Leu Ile Gln Thr Pro Leu Thr Leu Phe Ser Thr
            20              25              30
```

590

```
Glu Lys Val Lys Glu Gly His Val Val Val Asp Ser Ile Thr Ile Ile
        35              40              45
Thr Glu Gly Glu Asn Ala Ser Asn Lys His Pro Leu Pro Lys Leu Lys
    50              55              60
Thr Arg Ser Gly Ala Leu Phe Ser Gln Leu Asp Phe Asp Glu Asp Leu
65              70              75              80
Arg Ile Leu Ala Lys Glu Tyr Asp Ser Val Glu Pro Lys Val Glu Phe
            85              90              95
Ser Glu Gly Lys Thr Asn Ile Ala Leu His Leu Ile Ala Lys Pro Ser
            100             105             110
Ile Arg Asn Ile His Ile Ser Gly Asn Gln Val Val Pro Glu His Lys
        115             120             125
Ile Leu Lys Thr Leu Gln Ile Tyr Arg Asn Asp Leu Phe Glu Arg Glu
    130             135             140
Lys Phe Leu Lys Gly Leu Asp Asp Leu Arg Thr Tyr Tyr Leu Lys Arg
145             150             155             160
Gly Tyr Phe Ala Ser Ser Val Asp Tyr Ser Leu Glu His Asn Gln Glu
            165             170             175
Lys Gly His Ile Asp Val Leu Ile Lys Ile Asn Glu Gly Pro Cys Gly
            180             185             190
Lys Ile Lys Gln Leu Thr Phe Ser Gly Ile Ser Arg Ser Glu Lys Ser
        195             200             205
Asp Ile Gln Glu Phe Ile Gln Thr Lys Gln His Ser Thr Thr Thr Ser
    210             215             220
Trp Phe Thr Gly Ala Gly Leu Tyr His Pro Asp Ile Val Glu Gln Asp
225             230             235             240
Ser Leu Ala Ile Thr Asn Tyr Leu His Asn Asn Gly Tyr Ala Asp Ala
            245             250             255
Ile Val Asn Ser His Tyr Asp Leu Asp Asp Lys Gly Asn Ile Leu Leu
            260             265             270
Tyr Met Asp Ile Asp Arg Gly Ser Arg Tyr Thr Leu Gly His Val His
        275             280             285
Ile Gln Gly Phe Glu Val Leu Pro Lys Arg Leu Ile Glu Lys Gln Ser
    290             295             300
Gln Val Gly Pro Asn Asp Leu Tyr Cys Pro Asp Lys Ile Trp Asp Gly
305             310             315             320
Ala His Lys Ile Lys Gln Thr Tyr Ala Lys Tyr Gly Tyr Ile Asn Thr
            325             330             335
Asn Val Asp Val Leu Phe Ile Pro His Ala Thr Arg Pro Ile Tyr Asp
            340             345             350
Val Thr Tyr Glu Val Ser Glu Gly Ser Pro Tyr Lys Val Gly Leu Ile
        355             360             365
Lys Ile Thr Gly Asn Thr His Thr Lys Ser Asp Val Ile Leu His Glu
370             375             380
Thr Ser Leu Phe Pro Gly Asp Thr Phe Asn Arg Leu Lys Leu Glu Asp
385             390             395             400
Thr Glu Gln Arg Leu Arg Asn Thr Gly Tyr Phe Gln Ser Val Ser Val
            405             410             415
Tyr Thr Val Arg Ser Gln Leu Asp Pro Met Gly Asn Ala Asp Gln Tyr
        420             425             430
Arg Asp Ile Phe Val Glu Val Lys Glu Thr Thr Thr Gly Asn Leu Gly
        435             440             445
Leu Phe Leu Gly Phe Ser Ser Leu Asp Asn Leu Phe Gly Gly Ile Glu
    450             455         ,       460
Leu Ser Glu Ser Asn Phe Asp Leu Phe Gly Ala Arg Asn Ile Phe Ser
465             470             475             480
Lys Gly Phe Arg Cys Leu Arg Gly Gly Gly Glu His Leu Phe Leu Lys
            485             490             495
Ala Asn Phe Gly Asp Lys Val Thr Asp Tyr Thr Leu Lys Trp Thr Lys
        500             505             510
```

591

```
Pro His Phe Leu Asn Thr Pro Trp Ile Leu Gly Ile Glu Leu Asp Lys
        515                 520                 525
Ser Ile Asn Arg Ala Leu Ser Lys Asp Tyr Ala Val Gln Thr Tyr Gly
        530                 535                 540
Gly Asn Val Ser Thr Thr Tyr Ile Leu Asn Glu His Leu Lys Tyr Gly
545                 550                 555                 560
Leu Phe Tyr Arg Gly Ser Gln Thr Ser Leu His Glu Lys Arg Lys Phe
                565                 570                 575
Leu Leu Gly Pro Asn Ile Asp Ser Asn Lys Gly Phe Val Ser Ala Ala
                580                 585                 590
Gly Val Asn Leu Asn Tyr Asp Ser Val Asp Ser Pro Arg Thr Pro Thr
                595                 600                 605
Thr Gly Ile Arg Gly Gly Val Thr Phe Glu Val Ser Gly Leu Gly Gly
        610                 615                 620
Thr Tyr His Phe Thr Lys Leu Ser Leu Asn Ser Ser Ile Tyr Arg Lys
625                 630                 635                 640
Leu Thr Arg Lys Gly Ile Leu Lys Ile Lys Gly Glu Ala Gln Phe Ile
                645                 650                 655
Lys Pro Tyr Ser Asn Thr Thr Ala Glu Gly Val Pro Val Ser Glu Arg
                660                 665                 670
Phe Phe Leu Gly Gly Glu Thr Thr Val Arg Gly Tyr Lys Ser Phe Ile
                675                 680                 685
Ile Gly Pro Lys Tyr Ser Ala Thr Glu Pro Gln Gly Gly Leu Ser Ser
        690                 695                 700
Leu Leu Ile Ser Glu Glu Phe Gln Tyr Pro Leu Ile Arg Gln Pro Asn
705                 710                 715                 720
Ile Ser Ala Phe Val Phe Leu Asp Ser Gly Phe Val Gly Leu Gln Glu
                725                 730                 735
Tyr Lys Ile Ser Leu Lys Asp Leu Arg Ser Ser Ala Gly Phe Gly Leu
                740                 745                 750
Arg Phe Asp Val Met Asn Asn Val Pro Val Met Leu Gly Phe Gly Trp
        755                 760                 765
Pro Phe Arg Pro Thr Glu Thr Leu Asn Gly Glu Lys Ile Asp Val Ser
        770                 775                 780
Gln Arg Phe Phe Phe Ala Leu Gly Gly Met Phe
785                 790                 795


        <210> 303
        <211> 200
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 303
Ile Lys Asp Leu Ser Lys Glu Ile Phe Val Val Phe Arg Lys Gly Phe
1                   5                   10                  15
Trp Tyr Pro Phe Ser Ile Pro Lys Leu Val Gln Val Ile Met Lys Lys
                20                  25                  30
Leu Leu Phe Ser Thr Phe Leu Leu Val Leu Gly Ser Thr Ser Ala Ala
        35                  40                  45
His Ala Asn Leu Gly Tyr Val Asn Leu Lys Arg Cys Leu Glu Glu Ser
        50                  55                  60
Asp Leu Gly Lys Lys Glu Thr Glu Glu Leu Glu Ala Met Lys Gln Gln
65                  70                  75                  80
Phe Val Lys Asn Ala Glu Lys Ile Glu Glu Glu Leu Thr Ser Ile Tyr
                85                  90                  95
Asn Lys Leu Gln Asp Glu Asp Tyr Met Glu Ser Leu Ser Asp Ser Ala
        100                 105                 110
Ser Glu Glu Leu Arg Lys Lys Phe Glu Asp Leu Ser Gly Glu Tyr Asn
        115                 120                 125
Ala Tyr Gln Ser Gln Tyr Tyr Gln Ser Ile Asn Gln Ser Asn Val Lys
    130                 135                 140
```

592

```
Arg Ile Gln Lys Leu Ile Gln Glu Val Lys Ile Ala Ala Glu Ser Val
145                 150                 155                 160
Arg Ser Lys Glu Lys Leu Glu Ala Ile Leu Asn Glu Glu Ala Val Leu
                165                 170                 175
Ala Ile Ala Pro Gly Thr Asp Lys Thr Thr Glu Ile Ile Ala Ile Leu
                180                 185                 190
Asn Glu Ser Phe Lys Lys Gln Asn
        195                 200


        <210> 304
        <211> 367
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 304
Ser Lys Phe Lys Glu Phe Ser Met Ser Glu Ala Pro Val Tyr Thr Leu
1                 5                 10                  15
Lys Gln Leu Ala Glu Leu Leu Gln Val Glu Val Gln Gly Asn Ile Glu
        20                  25                  30
Thr Pro Ile Ser Gly Val Glu Asp Ile Ser Gln Ala Gln Pro His His
        35                  40                  45
Ile Ala Phe Leu Asp Asn Glu Lys Tyr Ser Ser Phe Leu Lys Asn Thr
        50                  55                  60
Lys Ala Gly Ala Ile Ile Leu Ser Arg Ser Gln Ala Met Gln His Ala
65                  70                  75                  80
His Leu Lys Lys Asn Phe Leu Ile Thr Asn Glu Ser Pro Ser Leu Thr
                85                  90                  95
Phe Gln Lys Cys Ile Glu Leu Phe Ile Glu Pro Val Thr Ser Gly Phe
        100                 105                 110
Pro Gly Ile His Pro Thr Ala Val Ile His Pro Thr Ala Arg Ile Glu
        115                 120                 125
Lys Asn Val Thr Ile Glu Pro Tyr Val Val Ile Ser Gln His Ala His
        130                 135                 140
Ile Gly Ser Asp Thr Tyr Ile Gly Ala Gly Ser Val Ile Gly Ala His
145                 150                 155                 160
Ser Val Leu Gly Ala Asn Cys Leu Ile His Pro Lys Val Val Ile Arg
                165                 170                 175
Glu Arg Val Leu Met Gly Asn Arg Val Val Val Gln Pro Gly Ala Val
                180                 185                 190
Leu Gly Ser Cys Gly Phe Gly Tyr Ile Thr Asn Ala Phe Gly His His
                195                 200                 205
Lys Pro Leu Lys His Leu Gly Tyr Val Ile Val Gly Asp Asp Val Glu
        210                 215                 220
Ile Gly Ala Asn Thr Thr Ile Asp Arg Gly Arg Phe Lys Asn Thr Val
225                 230                 235                 240
Ile His Glu Gly Thr Lys Ile Asp Asn Gln Val Gln Val Ala His His
                245                 250                 255
Val Glu Ile Gly Lys His Ser Ile Ile Val Ala Gln Ala Gly Ile Ala
                260                 265                 270
Gly Ser Thr Lys Ile Gly Glu His Val Ile Ile Gly Gly Gln Thr Gly
        275                 280                 285
Ile Thr Gly His Ile Ser Ile Ala Asp His Val Ile Met Ile Ala Gln
        290                 295                 300
Thr Gly Val Thr Lys Ser Ile Thr Ser Pro Gly Ile Tyr Gly Gly Ala
305                 310                 315                 320
Pro Ala Arg Pro Tyr Gln Glu Thr His Arg Leu Ile Ala Lys Ile Arg
                325                 330                 335
Asn Leu Pro Lys Thr Glu Glu Arg Leu Ser Lys Leu Glu Lys Gln Val
                340                 345                 350
Arg Asp Leu Ser Thr Pro Ser Leu Ala Glu Ile Pro Ser Glu Ile
        355                 360                 365
```

<210> 305
<211> 354
<212> PRT
<213> Chlamydia pneumoniae

<400> 305

```
Arg Glu Gln Lys Gly Leu His His Met Asp Val Ser Arg Lys Ile Asn
1               5               10              15
Arg His Thr Gln Phe Tyr Val Asp Ser Ile Asp Gly Val Ile Lys Asn
            20                  25                  30
Phe Asp His Lys Pro Ser Glu Asp Lys Ser Arg Asp His Glu Glu Leu
        35                  40                  45
Glu Glu Lys Leu Leu Thr Ile Thr Lys Arg Ile Val Ala Ser Ala Gln
    50                  55                  60
Glu Phe Gln Asn Arg Lys Thr Asp Ser Lys Asn Tyr Tyr Leu Lys Lys
65                  70                  75                  80
Thr Gln Trp Leu Pro Phe Lys Asn Glu Glu Leu Glu Gln Thr Lys Glu
                85                  90                  95
Leu Phe Ala Met Leu Thr Ser Met Asp Lys Lys Ile Ala Gln Leu Phe
            100                 105                 110
Phe Tyr Ser Pro Gly Cys Ser Ser Asp Trp Val Glu Phe Thr Glu Val
            115                 120                 125
Ile Cys His Leu Asn Asp Ser Ile Gly Leu Gly Gly Val Leu Leu Cys
    130                 135                 140
Cys Gly Leu Phe Glu Gln Gln Cys Glu His Val Val Thr Val Asn Lys
145                 150                 155                 160
Lys Leu Asp Leu Pro Leu Leu Leu Gly Thr Thr Val Val Asn Ser Leu
                165                 170                 175
Arg Tyr Tyr Leu Thr Tyr Arg Asn Ile Ser Leu Leu Asn Cys Gln Ser
            180                 185                 190
Met Ser Glu Leu Gly Lys Glu Leu Gly Asp Val Leu Lys Gln His Gly
            195                 200                 205
Val Ala Phe Thr Leu Ile Phe Lys Glu Ile Val Asp Ile Asp Leu Leu
    210                 215                 220
Asn Tyr Val Lys Leu Ile Gln Gly Leu Lys Arg Ser Gly Asn Ile Gln
225                 230                 235                 240
Ala Arg Ile Tyr Asp Asn Asp Val Pro Thr Leu Pro Ser Val Ser Ser
            245                 250                 255
Ser Pro Ile Ala Leu Arg Tyr Ser Leu Ala Asn Thr Ile Arg Gly Leu
            260                 265                 270
Ala Leu His Val Asp Phe Ser Ser Leu Lys Phe Ile Ser Pro Ser Ile
            275                 280                 285
Leu Ser Asn Thr Glu His Thr Ala Lys Ala Leu Asn Ser Gly Gly Glu
    290                 295                 300
Cys Phe Ile Phe Ser Asn Leu Asp Glu Phe Asn Leu Gly Met Lys Ile
305                 310                 315                 320
Val Met Gln Leu Leu Arg Thr Gly Lys Ile Ser Pro Glu Ile Leu Asn
                325                 330                 335
Lys Asn Ile Met Lys Ile Leu Met Ile Lys Arg Arg Val Arg Ser Leu
                340                 345                 350
Tyr Ile
```

<210> 306
<211> 356
<212> PRT
<213> Chlamydia pneumoniae

<400> 306

```
Asp Gln Lys Pro Leu Pro Lys Arg Leu Pro Tyr Lys Lys Val Met Asp
1               5               10              15
```

Ser Ser Ala Pro Tyr Asn Ile Ala Ser Gln Gly Thr Glu Lys Ser Thr
        20   25   30
Val Glu Arg Ile Leu Asp Leu Tyr Gly Pro Ala Ser Cys Ile Lys Phe
        35   40   45
Leu Lys Gln Met Val Leu Ile Arg Glu Phe Glu Ala Arg Gly Glu Glu
    50   55   60
Ala Tyr Leu Glu Gly Leu Val Gly Gly Phe Tyr His Ser Tyr Ala Gly
65   70   75   80
Gln Glu Ala Val Ala Thr Ala Ala Ile Ala Asn Thr Gly Leu Asp Pro
                85   90   95
Trp Val Phe Ser Ser Tyr Arg Cys His Ala Leu Ala Ile Leu Leu Asn
            100   105   110
Ile Pro Leu Gln Glu Ile Ala Ala Glu Leu Leu Gly Lys Glu Thr Gly
        115   120   125
Cys Ala Leu Gly Arg Gly Gly Ser Met His Met Cys Gly Pro Asn Phe
    130   135   140
Pro Gly Gly Phe Gly Ile Val Gly Gly Gln Ile Pro Leu Ala Ala Gly
145   150   155   160
Ala Ala Phe Thr Ile Lys Tyr Gln Glu Gln Lys Asn Arg Val Ser Leu
                165   170   175
Cys Phe Ile Gly Asp Gly Ala Val Ala Gln Gly Val Phe His Glu Thr
            180   185   190
Leu Asn Phe Val Ser Leu His Gln Leu Pro Leu Met Leu Ile Ile Glu
        195   200   205
Asn Asn Gly Trp Ser Met Gly Thr Ser Leu Asn Arg Ala Val Ala Lys
    210   215   220
Gln Pro Ile Ala Glu Ser Gln Gly Ser Ser Tyr Asp Ile Arg Ala Val
225   230   235   240
Thr Val Asn Gly Phe Asp Leu Phe Asn Ser Leu Leu Gly Phe Arg Glu
                245   250   255
Ala Tyr Arg Tyr Met Val Asp Thr Glu Ser Pro Val Leu Val Glu Cys
            260   265   270
Leu Cys Ser Arg Phe Arg Gly His Ser Ile Ser Asp Pro Asn Leu Tyr
        275   280   285
Arg Ser Lys Glu Glu Met Gln Cys Leu Phe Lys Lys Asp Pro Ile Val
    290   295   300
Leu Ala Lys Asp Trp Leu Ile Arg Leu Glu Val Leu Thr Glu Glu Glu
305   310   315   320
Phe Gln Asn Ile Arg Gln Glu Cys Lys Thr Ala Val Leu Glu Ala Phe
                325   330   335
Ser Asn Ala Lys Leu Ser Ser Asp Pro Ser Val Thr Thr Leu Glu Glu
            340   345   350
Gly Val Tyr Ala
        355

        <210> 307
        <211> 332
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 307
Arg Lys Glu Ser Met Pro Lys His Lys Thr Leu Glu Ile Arg Glu Ala
    1   5   10   15
Leu Arg Glu Ala Ile Asp Glu Glu Met Ser Arg Asp Pro Asn Val Cys
            20   25   30
Ile Leu Gly Glu Glu Val Gly Asp Tyr Asn Gly Ala Tyr Lys Val Thr
        35   40   45
Lys Gly Leu Leu Asp Lys Trp Gly Pro Lys Arg Val Ile Asp Ala Pro
    50   55   60
Ile Ser Glu Ala Ala Phe Ser Gly Ile Gly Ile Gly Ala Ala Leu Ser
65   70   75   80

595

```
Gly Leu Arg Pro Ile Ile Glu Phe Met Ser Trp Asn Phe Ser Phe Val
                85              90              95
Ala Leu Asp Gln Ile Ile Ser His Ala Ala Lys Met His Phe Met Thr
            100             105             110
Gly Gly Lys Phe Ser Val Pro Ile Val Phe Arg Gly Pro Asn Gly Ala
            115             120             125
Ala Ala Gln Val Ser Cys Gln His Ser His Cys Val Glu Ser Leu Tyr
        130             135             140
Ala Asn Ile Pro Gly Leu Ile Ile Ile Ala Pro Ser Asn Pro Tyr Asp
    145             150             155             160
Ala Lys Gly Leu Leu Lys Ser Ala Ile Arg Asn Asn Asn Pro Val Leu
                165             170             175
Phe Leu Glu Asn Glu Leu Glu Tyr Asn Leu Lys Gly Glu Val Pro Thr
                180             185             190
Glu Glu Tyr Leu Val Pro Ile Gly Lys Ala His Arg Val Gln Glu Gly
                195             200             205
Asn Asp Leu Thr Ile Ile Thr Tyr Ser Arg Met Val Ser Ile Thr Lys
        210             215             220
Glu Ala Cys Ser Leu Ala Lys Lys Arg Trp Gly Leu Ser Ile Glu Ile
    225             230             235             240
Ile Asp Leu Arg Thr Ile Lys Pro Leu Asp Ile Ser Thr Ile Leu Ser
                245             250             255
Ser Val Arg Lys Thr Ser Arg Cys Ile Val Ile Glu Glu Gly His Tyr
                260             265             270
Phe Ala Gly Ile Ser Ser Glu Ile Ile Ala Leu Ile Thr Glu His Val
                275             280             285
Phe Asp Ser Leu Asp Ala Pro Pro Leu Arg Val Cys Gln Lys Glu Thr
        290             295             300
Pro Met Pro Tyr Ser Lys Ile Leu Glu Gln Ala Thr Leu Pro Asn Val
    305             310             315             320
Asn Arg Ile Leu Asp Thr Ile Glu Lys Val Met Arg
                325             330

        <210> 308
        <211> 432
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 308
Gly Lys Phe Val Ile Ser Leu Leu Lys Met Pro Lys Leu Ser Pro Thr
    1               5               10              15
Met Glu Val Gly Thr Ile Val Lys Trp His Lys Lys Ser Asn Asp Gln
                20              25              30
Val Ser Phe Gly Asp Val Ile Val Glu Ile Ser Thr Asp Lys Ala Ile
            35              40              45
Leu Glu His Thr Ala Asn Glu Asp Gly Trp Ile Arg Glu Ile Leu Arg
        50              55              60
His Glu Gly Glu Lys Ile Val Ile Gly Thr Pro Ile Ala Val Leu Ser
65              70              75              80
Thr Glu Ala Asn Glu Pro Phe Asn Leu Glu Glu Leu Leu Pro Lys Thr
                85              90              95
Glu Pro Ser Asn Leu Glu Ala Ser Pro Lys Gly Ser Ser Glu Glu Val
            100             105             110
Ser Pro Ala Thr Thr Pro Gln Ala Ala Ser Ala Thr Phe Thr Ala Val
        115             120             125
Thr Phe Lys Pro Glu Pro Pro Leu Ser Ser Pro Leu Val Phe Lys His
    130             135             140
Val Gly Thr Thr Asn Asn Leu Ser Pro Leu Ala Arg Gln Leu Ala Lys
145             150             155             160
Glu Lys Asn Ile Asp Val Ser Ser Ile Gln Gly Ser Gly Pro Gly Gly
                165             170             175
```

596

```
Arg Ile Val Lys Lys Asp Leu Glu Lys Ala Pro Pro Lys Ser Ile Ala
        180                 185                 190
Gly Phe Gly Tyr Pro Glu Ser Pro Glu Val Pro Pro Gly Ser Tyr His
        195                 200                 205
Glu Glu Asn Leu Ser Pro Ile Arg Glu Val Ile Ala Ala Arg Leu Gln
        210                 215                 220
Ala Ala Lys Ile Ser Ile Pro His Phe Tyr Val Arg Gln Gln Val Tyr
225                     230                 235                 240
Ala Ser Pro Leu Leu Asn Leu Leu Lys Glu Leu Gln Ala Gln Gly Ile
                245                 250                 255
Lys Leu Ser Ile Asn Asp Cys Ile Val Arg Ala Cys Ala Leu Ala Leu
                260                 265                 270
Lys Glu Phe Pro Ser Ile Asn Ser Gly Phe Asn Ser Val Asp Asn Lys
            275                 280                 285
Ile Val Arg Phe Asp Thr Ile Asp Ile Ser Ile Ala Val Ala Ile Pro
        290                 295                 300
Asp Gly Ile Ile Thr Pro Ile Ile Arg Cys Ala Asp Arg Lys Asn Leu
305                 310                 315                 320
Gly Met Ile Ser Ala Glu Ile Lys Ser Leu Ala Leu Lys Ala Arg Asn
                325                 330                 335
Gln Ser Leu Gln Asp Thr Glu Tyr Lys Gly Gly Ser Phe Cys Val Ser
            340                 345                 350
Asn Leu Gly Met Thr Gly Ile Thr Glu Phe Thr Ala Ile Val Asn Pro
            355                 360                 365
Pro Gln Ala Ala Ile Leu Ala Val Gly Ser Val Thr Glu Gln Ala Leu
    370                 375                 380
Val Leu Asp Gly Glu Ile Thr Ile Gly Ser Thr Cys Asn Leu Thr Leu
385                 390                 395                 400
Ser Val Asp His Arg Val Ile Asp Gly Tyr Pro Ala Ala Met Phe Met
            405                 410                 415
Lys Arg Leu Gln Lys Ile Leu Glu Ala Pro Ala Val Leu Leu Leu Asn
            420                 425                 430

        <210> 309
        <211> 828
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 309
Asn Gly Cys Ile Val Glu Asp Phe Ser Ser Phe Asp Lys Asn Lys Val
1               5                   10                  15
Ser Val Asp Ser Met Lys Arg Ala Ile Leu Asp Arg Leu Tyr Leu Ser
            20                  25                  30
Val Val Gln Ser Pro Glu Ser Ala Ser Pro Arg Asp Ile Phe Thr Ala
        35                  40                  45
Val Ala Lys Thr Val Met Glu Trp Leu Ala Lys Gly Trp Leu Lys Thr
    50                  55                  60
Gln Asn Gly Tyr Tyr Lys Asn Asp Val Lys Arg Val Tyr Tyr Leu Ser
65                  70                  75                  80
Met Glu Phe Leu Leu Gly Arg Ser Leu Lys Ser Asn Leu Leu Asn Leu
                85                  90                  95
Gly Ile Leu Asp Leu Val Arg Lys Ala Leu Lys Thr Leu Asn Tyr Asp
            100                 105                 110
Phe Asp His Leu Val Glu Met Glu Ser Asp Ala Gly Leu Gly Asn Gly
        115                 120                 125
Gly Leu Gly Arg Leu Ala Ala Cys Tyr Leu Asp Ser Met Ala Thr Leu
    130                 135                 140
Ala Val Pro Ala Tyr Gly Tyr Gly Ile Arg Tyr Asp Tyr Gly Ile Phe
145                 150                 155                 160
Asp Gln Arg Ile Val Asn Gly Tyr Gln Glu Glu Ala Pro Asp Glu Trp
            165                 170                 175
```

597

```
Leu Arg Tyr Gly Asn Pro Trp Glu Ile Cys Arg Gly Glu Tyr Leu Tyr
             180                 185             190
Pro Val Arg Phe Tyr Gly Arg Val Ile His Tyr Thr Asp Ser Arg Gly
         195                 200             205
Lys Gln Val Ala Asp Leu Val Asp Thr Gln Glu Val Leu Ala Met Ala
    210             215                 220
Tyr Asp Ile Pro Ile Pro Gly Tyr Gly Asn Asp Thr Val Asn Ser Leu
225             230                 235                     240
Arg Leu Trp Gln Ala Gln Ser Pro Arg Gly Phe Glu Phe Ser Tyr Phe
             245                 250                 255
Asn His Gly Asn Tyr Ile Gln Ala Ile Glu Asp Ile Ala Leu Ile Glu
             260                 265                 270
Asn Ile Ser Arg Val Leu Tyr Pro Asn Asp Ser Ile Thr Glu Gly Gln
         275                 280                 285
Glu Leu Arg Leu Lys Gln Glu Tyr Phe Leu Val Ser Ala Thr Ile Gln
    290                 295                 300
Asp Ile Ile Arg Arg Tyr Thr Lys Thr His Ile Cys Leu Asp Asn Leu
305             310                 315                     320
Ala Asp Lys Val Val Val Gln Leu Asn Asp Thr His Pro Ala Leu Gly
             325                 330                     335
Ile Ala Glu Met Met His Ile Leu Val Asp Arg Glu Glu Leu Pro Trp
             340                 345                 350
Asp Lys Ala Trp Glu Met Thr Thr Val Ile Phe Asn Tyr Thr Asn His
    355                 360                 365
Thr Ile Leu Pro Glu Ala Leu Glu Arg Trp Pro Leu Asp Leu Phe Ser
    370                 375                 380
Lys Leu Leu Pro Arg His Leu Glu Ile Ile Tyr Glu Ile Asn Ser Arg
385             390                 395                     400
Trp Leu Glu Lys Val Gly Ser Arg Tyr Pro Lys Asn Asp Asp Lys Arg
             405                 410                 415
Arg Ser Leu Ser Ile Val Glu Glu Gly Tyr Gln Lys Arg Ile Asn Met
             420                 425                 430
Ala Asn Leu Ala Val Val Gly Ser Ala Lys Val Asn Gly Val Ser Ser
             435                 440                 445
Phe His Ser Gln Leu Ile Lys Asp Thr Leu Phe Lys Glu Phe Tyr Glu
    450                 455                 460
Phe Phe Pro Glu Lys Phe Ile Asn Val Thr Asn Gly Val Thr Pro Arg
465                 470                 475                 480
Arg Trp Ile Ala Leu Cys Asn Pro Arg Leu Ser Lys Leu Leu Asn Glu
             485                 490                 495
Thr Ile Gly Asp Arg Tyr Ile Ile Asp Leu Ser His Leu Ser Leu Ile
             500                 505                 510
Arg Ser Phe Ala Glu Asp Ser Gly Phe Arg Asp His Trp Lys Gly Val
             515                 520                 525
Lys Leu Lys Asn Lys Gln Asp Leu Thr Ser Arg Ile Tyr Asn Glu Val
    530                 535                 540
Gly Glu Ile Val Asp Pro Asn Ser Leu Phe Asp Cys His Ile Lys Arg
545                 550                 555                 560
Ile His Glu Tyr Lys Arg Gln Leu Met Asn Ile Leu Arg Val Ile Tyr
             565                 570                 575
Val Tyr Asn Asp Leu Lys Glu Asn Pro Asn Gln Asp Val Val Pro Thr
         580                 585                 590
Thr Val Ile Phe Ser Gly Lys Ala Ala Pro Gly Tyr Val Met Ala Lys
         595                 600                 605
Leu Ile Ile Lys Leu Ile Asn Ser Val Ala Asp Val Val Asn Gln Asp
    610                 615                 620
Ser Arg Val Asn Asp Lys Leu Lys Val Leu Phe Leu Pro Asn Tyr Arg
625                 630                 635                 640
Val Ser Met Ala Glu His Ile Ile Pro Gly Thr Asp Leu Ser Glu Gln
             645                 650                 655
```

598

```
Ile Ser Thr Ala Gly Met Glu Ala Ser Gly Thr Gly Asn Met Lys Phe
            660             665             670
Ala Leu Asn Gly Ala Leu Thr Ile Gly Thr Met Asp Gly Ala Asn Ile
            675             680             685
Glu Met Ala Glu His Ile Gly Lys Glu Asn Met Phe Ile Phe Gly Leu
            690             695             700
Leu Glu Glu Gln Ile Val Gln Leu Arg Arg Glu Tyr Cys Pro Gln Thr
705             710             715             720
Ile Cys Asp Lys Asn Pro Lys Ile Arg Gln Val Leu Asp Leu Leu Glu
            725             730             735
Gln Gly Phe Phe Asn Ser Asn Asp Lys Asp Leu Phe Lys Pro Ile Val
            740             745             750
His Arg Leu Leu His Glu Gly Asp Pro Phe Phe Val Leu Ala Asp Leu
            755             760             765
Glu Ser Tyr Ile Ala Ala His Glu Asn Val Asn Lys Leu Phe Lys Glu
770             775             780
Pro Asp Ser Trp Thr Lys Ile Ser Ile Tyr Asn Thr Ala Gly Met Gly
785             790             795             800
Phe Phe Ser Ser Asp Arg Ala Ile Gln Asp Tyr Ala Arg Asp Ile Trp
            805             810             815
His Val Pro Thr Lys Ser Cys Ser Gly Glu Gly Asn
            820             825


        <210> 310
        <211> 128
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 310
Phe Phe Thr Gln Glu Asn Asn Met Ala Thr Val Ala Gln Thr Pro Gln
1           5               10              15
Thr Thr Gln Pro Gln Pro Ser Val Ser His Lys Ala Thr His Arg Tyr
            20              25              30
Cys Ser Trp Val Phe Phe Lys Pro Ile Leu Val Ser Leu Gly Leu Leu
        35              40              45
Leu Ala Ser Leu Thr Thr Leu Gly Leu Val Ile Ala Ser Gly Val Thr
    50              55              60
Leu Ser Leu Gly Ile Gly Ile Val Leu Ala Ile Gln Ile Val Leu Ala
65              70              75              80
Gly Ile Ala Leu Val Leu Ala Phe Asn His Ile Arg Gln Phe Lys Gln
            85              90              95
Ala Arg Thr Ala Glu Leu Asn Ser Met Lys Met Ile Ser Ala Pro Ala
        100             105             110
Ala Ala Thr Val Gln Lys Gln Lys Leu Glu Asp Arg Tyr Ser Ser Lys
    115             120             125


        <210> 311
        <211> 461
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 311
Phe Met Arg Ala Trp Glu Glu Phe Leu Leu Leu Gln Glu Lys Glu Ile
1           5               10              15
Gly Thr Asn Thr Val Asp Lys Trp Leu Arg Ser Leu Lys Val Leu Cys
            20              25              30
Phe Asp Ala Cys Asn Leu Tyr Leu Glu Ala Gln Asp Ser Phe Gln Ile
        35              40              45
Thr Trp Phe Glu Glu His Ile Arg His Lys Val Lys Ser Gly Leu Val
    50              55              60
```

Asn Asn Asn Asn Lys Pro Ile Arg Val His Val Thr Ser Val Asp Lys
65   70   75   80
Ala Ala Pro Phe Tyr Lys Glu Lys Gln Met Gln Gln Glu Lys Thr Ala
            85   90   95
Tyr Phe Thr Met His Tyr Gly Ser Val Asn Pro Glu Met Thr Phe Ser
            100   105   110
Asn Phe Leu Val Thr Pro Glu Asn Asp Leu Pro Phe Arg Val Leu Gln
        115   120   125
Glu Phe Thr Lys Ser Pro Asp Glu Asn Gly Gly Val Thr Phe Asn Pro
    130   135   140
Ile Tyr Leu Phe Gly Pro Glu Gly Ser Gly Lys Thr His Leu Met Gln
145   150   155   160
Ser Ala Ile Ser Val Leu Arg Glu Ser Gly Gly Lys Ile Leu Tyr Val
            165   170   175
Ser Ser Asp Leu Phe Thr Glu His Leu Val Ser Ala Ile Arg Ser Gly
        180   185   190
Glu Met Gln Lys Phe Arg Ser Phe Tyr Arg Asn Ile Asp Ala Leu Phe
        195   200   205
Ile Glu Asp Ile Glu Val Phe Ser Gly Lys Ser Ala Thr Gln Glu Glu
    210   215   220
Phe Phe His Thr Phe Asn Ser Leu His Ser Glu Gly Lys Leu Ile Val
225   230   235   240
Val Ser Ser Ser Tyr Ala Pro Val Asp Leu Val Ala Val Glu Asp Arg
            245   250   255
Leu Ile Ser Arg Phe Glu Trp Gly Val Ala Ile Pro Ile His Pro Leu
            260   265   270
Val Gln Glu Gly Leu Arg Ser Phe Leu Met Arg Gln Val Glu Arg Leu
            275   280   285
Ser Ile Arg Ile Gln Glu Thr Ala Leu Asp Phe Leu Ile Tyr Ala Leu
    290   295   300
Ser Ser Asn Val Lys Thr Leu Leu His Ala Leu Asn Leu Leu Ala Lys
305   310   315   320
Arg Val Met Tyr Lys Lys Leu Ser His Gln Leu Leu Tyr Glu Asp Asp
            325   330   335
Val Lys Thr Leu Leu Lys Asp Val Leu Glu Ala Ala Gly Ser Val Arg
            340   345   350
Leu Thr Pro Leu Lys Ile Ile Arg Asn Val Ala Gln Tyr Tyr Gly Val
            355   360   365
Ser Gln Glu Ser Ile Leu Gly Arg Ser Gln Ser Arg Glu Tyr Val Leu
    370   375   380
Pro Arg Gln Val Ala Met Tyr Phe Cys Arg Gln Lys Leu Ser Leu Ser
385   390   395   400
Tyr Val Arg Ile Gly Asp Val Phe Ser Arg Asp His Ser Thr Val Ile
            405   410   415
Ser Ser Ile Arg Leu Ile Glu Gln Lys Ile Glu Glu Asn Ser His Asp
            420   425   430
Ile His Met Ala Ile Gln Asp Ile Ser Lys Asn Leu Asn Ser Leu His
        435   440   445
Lys Ser Leu Glu Phe Phe Pro Ser Glu Glu Met Ile Ile
    450   455   460

        <210> 312
        <211> 808
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 312
Tyr Phe Asp Leu Leu Ser Leu Ile Phe Arg Val Tyr Gln Met Asn Lys
1   5   10   15
Arg Thr Leu Leu Phe Val Ser Leu Ile Gly Ile Ala Phe Val Gly Cys
            20   25   30

600

```
Gln Ile Phe Phe Gly Tyr Asn Glu Phe Arg Ser Cys Lys Asn Leu Ala
        35                40                45
Glu Lys Gln Arg Lys Ile Ser Glu Gln Thr Leu Ala Ala Val Glu Ser
    50                55                60
Val Gly Leu Ser Val Ala Ser Trp Asp Thr Asp Val Asn Gly Glu Glu
65                70                75                80
His Lys Asn Asn Tyr Ala Val Arg Val Gly Asp Lys Leu Phe Leu Leu
            85                90                    95
His Asn Gly Glu Ala Ala Gln Ser Val Tyr Ser Ser Gly Glu Ser Trp
        100               105               110
Ser Phe Val Asp His Lys Cys Gly Phe Asp Asn Ile His Leu Ala Leu
        115               120               125
Tyr Arg Gln Gln Gly Ser Ser Phe Asn Pro Thr Asn Thr Gly Lys Val
    130               135               140
Phe Leu Pro Thr Asn His Glu Gly Leu Pro Val Leu Val Val Glu Phe
145               150               155               160
Arg Asn Asn Lys Glu Pro Leu Val Phe Leu Gly Glu Tyr Ala Gln Gly
            165               170               175
Arg Ile Ser Asn Lys Asp Ser Thr Ile Phe Gly Thr Ala Leu Val Phe
            180               185               190
Trp Arg Ser Gly Ser Asp Tyr Ile Pro Leu Gly Leu Tyr Asp Ser Arg
    195               200               205
Glu Glu Lys Leu Val Ser Leu Asp Leu Pro Ile Thr Arg Ala Val Ile
    210               215               220
Phe Gly Asn Asp Gln Asp Ser Ala Lys Ser Ser Asp Thr Ala Asn His
225               230               235               240
Tyr Val Leu Phe Asn Asp Tyr Met Gln Ile Ile Val Ser Glu Glu Ser
            245               250               255
Gly Ser Ile Glu Gly Ile Asn Leu Pro Phe Ala Ser Thr Asn Asn Lys
        260               265               270
Ser Ile Val Asn Glu Ile Gly Phe Asp Arg Asp Leu Ala Ser Glu Lys
        275               280               285
Ser Pro Glu Ala Leu Phe Pro Gly Leu Ser Ser Lys Leu Pro Asp Gly
    290               295               300
Gln Gln Ala Lys Asn Ser Ile Gly Gly Tyr Tyr Pro Leu Leu Arg Arg
305               310               315               320
Gly Leu Leu Ser Asp Ser Lys Lys Leu Leu Pro Leu Glu Tyr His Ala
            325               330               335
Leu Asn Val Val Ser Gly Arg Glu Leu Ala Thr Pro Val Ala Leu Arg
            340               345               350
Tyr Arg Val Leu Ser Tyr Thr Pro His Ser Ile Gln Leu Glu Ser Leu  .
    355               360               365
Asp Arg Ser Val Gln Lys Val Tyr Lys Leu Pro Glu Asn Pro Glu Glu
    370               375               380
Lys Pro Tyr Val Phe Glu Thr Ala Ile Thr Leu Thr Lys Glu Thr Glu
385               390               395               400
Asp Val Trp Val Thr Ser Gly Val Pro Glu Val Glu Ile Met Ser Asn
            405               410               415
Ala Ser Ala Pro Thr Ile Lys Tyr Arg Val Ile Lys Lys Asn Lys Gly
        420               425               430
Ser Leu Asp Lys Val Lys Leu Pro Lys Val Lys Glu Pro Leu Ala Ile
        435               440               445
Arg Arg Gly Val Tyr Pro Gln Trp Ile Leu Asn Ser Asn Gly Tyr Phe
    450               455               460
Gly Ile Ile Leu Thr Pro Leu Ser Glu Ile Ala Ser Gly Tyr Gly Ser
465               470               475               480
Leu Tyr Ile Ser Gly Ser Thr Ala Pro Thr Arg Leu Ser Ala Ile Ser
            485               490               495
Pro Lys Asn Gln Leu Tyr Pro Val Ser Lys Tyr Pro Gly Tyr Glu Thr
        500               505               510
```

601

```
Leu Leu Pro Leu Pro Lys Asp Ala Gly Thr His Arg Phe Leu Val Tyr
        515                 520                 525
Ala Gly Pro Leu Ala Glu Pro Thr Leu Lys Val Leu Asp Lys Thr Ile
        530                 535                 540
Thr Gln Glu Lys Gly Glu Asn Pro Glu Tyr Leu Asp Ser Ile Ser Phe
545                 550                 555                     560
Arg Gly Val Phe Ala Phe Ile Thr Ala Pro Phe Ala Ala Leu Leu Phe
                565                 570                 575
Ile Ile Met Lys Phe Phe Lys Leu Val Thr Gly Ser Trp Gly Ile Ser
                580                 585                 590
Ile Ile Leu Leu Thr Val Phe Leu Lys Leu Leu Leu Tyr Pro Leu Asn
                595                 600                 605
Ala Trp Ser Ile Arg Ser Met Arg Arg Met Gln Ile Leu Ser Pro Tyr
        610                 615                 620
Ile Gln Gln Ile Gln Gln Lys Tyr Lys Asn Glu Pro Lys Arg Ala Gln
625                 630                 635                     640
Met Glu Ile Met Gly Leu Tyr Lys Thr Asn Lys Val Asn Pro Ile Thr
                645                 650                 655
Gly Cys Leu Pro Leu Leu Ile Gln Leu Pro Phe Leu Ile Ala Met Phe
                660                 665                 670
Asp Leu Leu Lys Ser Ser Phe Leu Leu Arg Gly Ala Ser Phe Ile Pro
        675                 680                 685
Gly Trp Ile Asp Asn Leu Thr Ala Pro Asp Val Leu Phe Ser Trp Gln
        690                 695                 700
Thr Ser Ile Trp Phe Ile Gly Asn Glu Phe His Leu Leu Pro Ile Leu
705                 710                 715                     720
Leu Gly Ile Val Met Phe Leu Gln Gln Lys Val Thr Ser Leu His Lys
                725                 730                 735
Lys Gly Pro Val Thr Asp Gln Gln Lys Gln Gln Gln Val Met Gly Asn
                740                 745                 750
Met Met Ala Ile Leu Phe Thr Ala Met Phe Tyr Asn Phe Pro Ser Gly
        755                 760                 765
Leu Asn Ile Tyr Trp Leu Ser Ser Met Ile Leu Gly Val Val Gln Gln
        770                 775                 780
Trp Ile Thr Asn Lys Ile Leu Asp Ser Lys His Leu Lys Asn Glu Val
785                 790                 795                     800
Val Leu Asn Asn Lys Lys His Arg
                805

        <210> 313
        <211> 293
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 313
Asp Met Arg Ala Glu Met Ala Val Ile Tyr Trp Asp Arg Ser Lys Ile
 1              5                 10                  15
Val Trp Ser Phe Glu Pro Trp Ser Leu Arg Leu Thr Trp Tyr Gly Val
                20                25                30
Phe Phe Thr Val Gly Ile Phe Leu Ala Cys Leu Ser Ala Arg Tyr Leu
        35                  40                  45
Ala Leu Ser Tyr Tyr Gly Leu Lys Asp His Leu Ser Phe Ser Lys Ser
        50                  55                  60
Gln Leu Arg Val Ala Leu Glu Asn Phe Phe Ile Tyr Ser Ile Leu Phe
65                  70                  75                      80
Ile Val Pro Gly Ala Arg Leu Ala Tyr Val Ile Phe Tyr Gly Trp Ser
                85                  90                  95
Phe Tyr Leu Gln His Pro Glu Glu Ile Ile Gln Ile Trp His Gly Gly
        100                 105                 110
Leu Ser Ser His Gly Gly Val Leu Gly Phe Leu Leu Trp Ala Ala Ile
        115                 120                 125
```

```
Phe Ser Trp Ile Tyr Lys Lys Lys Ile Ser Lys Leu Thr Phe Leu Phe
    130             135             140
Leu Thr Asp Leu Cys Gly Ser Val Phe Gly Ile Ala Ala Phe Phe Ile
145             150             155             160
Arg Leu Gly Asn Phe Trp Asn Gln Glu Ile Val Gly Thr Pro Thr Ser
                165             170             175
Leu Pro Trp Gly Val Val Phe Ser Asp Pro Met Gln Gly Val Gln Gly
            180             185             190
Val Pro Val His Pro Val Gln Leu Tyr Glu Gly Ile Ser Tyr Leu Val
        195             200             205
Val Ser Gly Ile Leu Tyr Phe Leu Ser Tyr Lys Arg Tyr Leu His Leu
    210             215             220
Gly Lys Gly Tyr Val Thr Ser Ile Ala Cys Ile Ser Val Ala Phe Ile
225             230             235             240
Arg Phe Phe Ala Glu Tyr Val Lys Ser His Gln Gly Lys Val Leu Ala
                245             250             255
Glu Asp Cys Leu Leu Thr Ile Gly Gln Ile Leu Ser Ile Pro Leu Phe
            260             265             270
Leu Phe Gly Val Ala Leu Leu Ile Cys Ser Leu Lys Ala Arg Arg
        275             280             285
His Arg Ser His Ile
        290
```

```
        <210> 314
        <211> 153
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 314
Cys Thr Met Ala Arg Asn Ile Lys Tyr Phe Leu Ile Leu Phe Pro Gly
1               5               10              15
Ile Leu Trp Ile Ser Ala Gly Met Lys Leu Leu Leu Lys Ala Thr Ala
            20              25              30
Ile Ala Leu Asp Pro Leu Ser Ser Phe Phe Thr Tyr Cys Leu Leu Ser
        35              40              45
Met Val Ser Trp Gly Leu Ala Ser Leu Lys His Arg Tyr Leu Leu Ser
    50              55              60
Lys Thr Ile Arg Lys Gln Leu Ser Leu Ser Ser Glu Phe Phe Ser Gln
65              70              75              80
Lys Ile Thr Trp Ile Ala Tyr Ile Lys Gln Thr Phe Ile Ser Arg Arg
                85              90              95
Phe Leu Ile Met Val Ile Met Ile Ala Phe Ser Leu Val Leu Arg Arg
            100             105             110
Tyr Ile Ser Asn Pro Gln Ala Leu Phe Val Ile Arg Ala Thr Val Gly
        115             120             125
Tyr Ala Leu Ile Lys Thr Ala Ile Ala Tyr Phe Ser Lys Leu Gln Asn
    130             135             140
Ala Leu Met Glu Asn Pro Glu Gly Asn
145                 150
```

```
        <210> 315
        <211> 133
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 315
Trp Lys Ile Leu Lys Glu Ile Ser Ala Asn Ser Met Glu Ile Ile His
1               5               10              15
Ile Gly Thr Asp Ile Ile Glu Ile Ser Arg Ile Arg Glu Ala Ile Ala
            20              25              30
```

603

```
Thr His Gly Asn Arg Leu Leu Asn Arg Ile Phe Thr Glu Ala Glu Gln
        35                      40                  45
Lys Tyr Cys Leu Glu Lys Thr Asp Pro Ile Pro Ser Phe Ala Gly Arg
    50                      55                  60
Phe Ala Gly Lys Glu Ala Val Ala Lys Ala Leu Gly Thr Gly Ile Gly
65                      70                  75                  80
Ser Val Val Ala Trp Lys Asp Ile Glu Val Phe Lys Val Ser His Gly
                85                  90                  95
Pro Glu Val Leu Leu Pro Ser His Val Tyr Ala Lys Ile Gly Ile Ser
            100                 105                 110
Lys Val Ile Leu Ser Ile Ser His Cys Lys Glu Tyr Ala Thr Ala Thr
        115                 120                 125
Ala Ile Ala Leu Ala
    130


    <210> 316
    <211> 311
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 316
Met Ile His Ser Arg Leu Ile Ile Ile Gly Ser Gly Pro Ser Gly Tyr
1                   5                   10                  15
Thr Ala Ala Ile Tyr Ala Ser Arg Ala Leu Leu His Pro Leu Leu Phe
            20                  25                  30
Glu Gly Phe Phe Ser Gly Ile Ser Gly Gly Gln Leu Met Thr Thr Thr
        35                  40                  45
Glu Val Glu Asn Phe Pro Gly Phe Pro Glu Gly Ile Leu Gly Pro Lys
    50                  55                  60
Leu Met Asn Asn Met Lys Glu Gln Ala Val Arg Phe Gly Thr Lys Thr
65                  70                  75                  80
Leu Ala Gln Asp Ile Ile Ser Val Asp Phe Ser Val Arg Pro Phe Ile
                85                  90                  95
Leu Lys Ser Lys Glu Glu Thr Tyr Ser Cys Asp Ala Cys Ile Ile Ala
            100                 105             .       110 .
Thr Gly Ala Ser Ala Lys Arg Leu Glu Ile Pro Gly Ala Gly Asn Asp
        115                 120                 125
Glu Phe Trp Gln Lys Gly Val Thr Ala Cys Ala Val Cys Asp Gly Ala
        130                 135                 140
Ser Pro Ile Phe Lys Asn Lys Asp Leu Tyr Val Ile Gly Gly Gly Asp
145                 150                 155                 160
Ser Ala Leu Glu Glu Ala Leu Tyr Leu Thr Arg Tyr Gly Ser His Val
                165                 170                 175
Tyr Val Val His Arg Arg Asp Lys Leu Arg Ala Ser Lys Ala Met Glu
                180                 185                 190
Ala Arg Ala Gln Asn Asn Glu Lys Ile Thr Phe Leu Trp Asn Ser Glu
        195                 200                 205
Ile Val Lys Ile Ser Gly Asp Ser Ile Val Arg Ser Val Asp Ile Lys
    210                 215                 220
Asn Val Gln Thr Gln Glu Ile Thr Thr Arg Glu Ala Ala Gly Val Phe
225                 230                 235                 240
Phe Ala Ile Gly His Lys Pro Asn Thr Asp Phe Leu Gly Gly Gln Leu
            245                 250                 255
Thr Leu Asp Glu Ser Gly Tyr Ile Val Thr Glu Lys Gly Thr Ser Lys
            260                 265                 270
Thr Ser Val Pro Gly Val Phe Ala Ala Gly Asp Val Gln Asp Lys Tyr
        275                 280                 285
Tyr Arg Gln Ala Val Thr Ser Ala Gly Ser Gly Cys Ile Ala Ala Leu
    290                 295                 300
Asp Ala Glu Arg Phe Leu Gly
305                 310
```

604

<210> 317
<211> 580
<212> PRT
<213> Chlamydia pneumoniae

<400> 317

```
Met Pro Lys Gln Ala Glu Tyr Thr Trp Gly Ser Lys Lys Ile Leu Asp
1               5                   10                  15
Asn Ile Glu Cys Leu Thr Glu Asp Val Ala Glu Phe Lys Asp Leu Leu
            20                  25                  30
Tyr Thr Ala His Arg Ile Thr Ser Ser Glu Glu Glu Ser Asp Asn Glu
        35                  40                  45
Ile Gln Pro Gly Ala Ile Leu Lys Gly Thr Val Val Asp Ile Asn Lys
    50                  55                  60
Asp Phe Val Val Val Asp Val Gly Leu Lys Ser Glu Gly Val Ile Pro
65                  70                  75                  80
Met Ser Glu Phe Ile Asp Ser Ser Glu Gly Leu Val Leu Gly Ala Glu
                85                  90                  95
Val Glu Val Tyr Leu Asp Gln Ala Glu Asp Glu Glu Gly Lys Val Val
            100                 105                 110
Leu Ser Arg Glu Lys Ala Thr Arg Gln Arg Gln Trp Glu Tyr Ile Leu
        115                 120                 125
Ala His Cys Glu Glu Gly Ser Ile Val Lys Gly Gln Ile Thr Arg Lys
    130                 135                 140
Val Lys Gly Gly Leu Ile Val Asp Ile Gly Met Glu Ala Phe Leu Pro
145                 150                 155                 160
Gly Ser Gln Ile Asp Asn Lys Lys Ile Lys Asn Leu Asp Asp Tyr Val
                165                 170                 175
Gly Lys Val Cys Glu Phe Lys Ile Leu Lys Ile Asn Val Glu Arg Arg
            180                 185                 190
Asn Ile Val Val Ser Arg Arg Glu Leu Leu Glu Ala Glu Arg Ile Ser
        195                 200                 205
Lys Lys Ala Glu Leu Ile Glu Gln Ile Ser Ile Gly Glu Tyr Arg Lys
    210                 215                 220
Gly Val Val Lys Asn Ile Thr Asp Phe Gly Val Phe Leu Asp Leu Asp
225                 230                 235                 240
Gly Ile Asp Gly Leu Leu His Ile Thr Asp Met Thr Trp Lys Arg Ile
                245                 250                 255
Arg His Pro Ser Glu Met Val Glu Leu Asn Gln Glu Leu Glu Val Ile
            260                 265                 270
Ile Leu Ser Val Asp Lys Glu Lys Gly Arg Val Ala Leu Gly Leu Lys
        275                 280                 285
Gln Lys Glu His Asn Pro Trp Glu Asp Ile Glu Lys Lys Tyr Pro Pro
    290                 295                 300
Gly Lys Arg Val Leu Gly Lys Ile Val Lys Leu Leu Pro Tyr Gly Ala
305                 310                 315                 320
Phe Ile Glu Ile Glu Glu Gly Ile Glu Gly Leu Ile His Ile Ser Glu
                325                 330                 335
Met Ser Trp Val Lys Asn Ile Val Asp Pro Ser Glu Val Val Asn Lys
            340                 345                 350
Gly Asp Glu Val Glu Ala Ile Val Leu Ser Ile Gln Lys Asp Glu Gly
        355                 360                 365
Lys Ile Ser Leu Gly Leu Lys Gln Thr Glu Arg Asn Pro Trp Asp Asn
    370                 375                 380
Ile Glu Glu Lys Tyr Pro Ile Gly Leu His Val Asn Ala Glu Ile Lys
385                 390                 395                 400
Asn Leu Thr Asn Tyr Gly Ala Phe Val Glu Leu Glu Pro Gly Ile Glu
                405                 410                 415
Gly Leu Ile His Ile Ser Asp Met Ser Trp Ile Lys Lys Val Ser His
            420                 425                 430
```

```
Pro Ser Glu Leu Phe Lys Lys Gly Asn Ser Val Glu Ala Val Ile Leu
        435             440             445
Ser Val Asp Lys Glu Ser Lys Lys Ile Thr Leu Gly Val Lys Gln Leu
    450             455             460
Ser Ser Asn Pro Trp Asn Glu Ile Glu Ala Met Phe Pro Ala Gly Thr
465             470             475                         480
Val Ile Ser Gly Val Val Thr Lys Ile Thr Ala Phe Gly Ala Phe Val
                485             490             495
Glu Leu Gln Asn Gly Ile Glu Gly Leu Ile His Val Ser Glu Leu Ser
        500             505             510
Asp Lys Pro Phe Ala Lys Ile Glu Asp Ile Ile Ser Ile Gly Glu Asn
        515             520             525
Val Ser Ala Lys Val Ile Lys Leu Asp Pro Asp His Lys Lys Val Ser
    530             535             540
Leu Ser Val Lys Glu Tyr Leu Ala Asp Asn Ala Tyr Asp Gln Asp Ser
545             550             555                         560
Arg Thr Glu Leu Asp Phe Lys Asp Ser Gln Gly Pro Lys Glu Arg Lys
                565             570             575
Lys Lys Gly Lys
            580


        <210> 318
        <211> 446
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 318
Leu Phe Thr Asp Phe Leu Ile Tyr Lys Pro Ser Ile Met Asn Lys Asn
1               5               10              15
Leu Val Ala Ile Phe Asp Tyr Met Glu Lys Glu Lys Gly Ile Gln Arg
            20              25              30
Ser Thr Ile Ile Gly Ala Ile Glu Ser Ala Leu Lys Ile Ala Ala Lys
        35              40              45
Lys Thr Leu Arg Asp Asp Ala Asn Ile Ser Val Asn Ile Asn Ser Arg
    50              55              60
Thr Gly Asp Ile Glu Val Phe Cys Glu Lys Glu Ile Val Glu Ile Cys
65              70              75                          80
Gln Asn Pro Ser Lys Glu Ile Pro Leu Asp Lys Ala Arg Glu Tyr Asp
            85              90              95
Pro Asp Cys Gln Ile Gly Gln Tyr Met Asp Val Pro Phe Val Ser Asp
            100             105             110
Asn Phe Gly Arg Ile Ala Ala His Ala Ala Arg Gln Ile Ile Gly Gln
        115             120             125
Lys Leu Arg His Ala Glu Arg Asp Val Ile Tyr Glu Glu Tyr Arg His
    130             135             140
Arg Val Asn Glu Thr Leu Ser Gly Val Val Lys Arg Phe Ala Lys Gly
145             150             155                         160
Ser Asn Leu Ile Ile Asp Leu Gly Lys Val Glu Ala Ile Leu Pro Thr
            165             170             175
Arg Phe Tyr Pro Lys Thr Glu Lys His Lys Ile Gly Asp Lys Ile Tyr
        180             185             190
Ala Leu Leu Tyr Glu Val Gln Glu Ser Glu Asn Gly Gly Ala Glu Val
        195             200             205
Ile Leu Ser Arg Ser His Ala Glu Phe Val Lys Gln Leu Phe Ile Gln
    210             215             220
Glu Val Pro Glu Leu Glu Glu Gly Ser Val Glu Ile Val Lys Ile Ala
225             230             235                         240
Arg Glu Ala Gly Tyr Arg Thr Lys Leu Ala Val Arg Ser Ser Asp Pro
            245             250             255
Lys Thr Asp Pro Val Gly Ala Phe Val Gly Met Arg Gly Ser Arg Val
            260             265             270
```

```
Lys Asn Ile Ile Arg Glu Leu Asn Asp Glu Lys Ile Asp Ile Val Asn
        275                 280             285
Tyr Ser Pro Val Ser Thr Glu Leu Leu Gln Asn Leu Leu Tyr Pro Ile
    290             295             300
Glu Ile Gln Lys Ile Ala Ile Leu Glu Asp Asp Lys Val Ile Ala Ile
305             310             315                     320
Val Val Asn Asp Ala Asp Tyr Ala Thr Val Ile Gly Lys Arg Gly Ile
            325             330                     335
Asn Ala Arg Leu Ile Ser His Ile Leu Asp Tyr Glu Leu Glu Val Gln
        340             345             350
Arg Met Ser Glu Tyr Asn Lys Leu Leu Glu Ile Gln Arg Leu Gln Leu
        355             360             365
Ala Glu Phe Asp Ser Pro His Leu Asp Gln Pro Leu Glu Met Glu Gly
    370             375             380
Ile Ser Lys Leu Val Ile Gln Asn Leu Glu His Ala Gly Tyr Asp Thr
385             390             395                     400
Ile Arg Arg Val Leu Leu Ala Ser Ala Asn Asp Leu Ala Ser Val Pro
            405             410                     415
Gly Ile Ser Leu Glu Leu Ala Tyr Lys Ile Leu Glu Gln Val Ser Lys
            420             425                     430
Tyr Gly Glu Ser Lys Val Asp Glu Lys Pro Glu Ile Glu Asp
        435                 440             445


            <210> 319
            <211> 902
            <212> PRT
            <213> Chlamydia pneumoniae


            <400> 319
Ser Leu Leu Ile Arg Ser Leu Ser Lys Ser Ala Asn Met Glu Lys Val
1               5               10              15
Lys Leu Thr Lys Asn Leu Lys Leu Lys Ile Lys Asn Ala Gln Leu Thr
        20              25              30
Lys Ala Ala Gly Leu Asp Lys Leu Lys Gln Lys Leu Ala Gln Ala Gly
        35              40              45
Ser Ser Glu Ala Lys Ser Ser Ser Glu Lys Pro Ser Ala Lys Glu Lys
    50              55              60
Ser Val Lys Val Ala Leu Ala Ala Thr Ser Thr Pro Thr Ala Ser Ala
65              70              75                      80
Glu Gln Ala Ser Pro Glu Ser Thr Ser Arg Arg Ile Arg Ala Lys Asn
            85              90              95
Arg Ser Ser Phe Ser Ser Ser Glu Glu Glu Ser Ser Ala His Ile Pro
        100             105             110
Val Asp Thr Ser Glu Pro Ala Pro Val Ser Ile Ala Asp Pro Glu Pro
    115             120             125
Glu Leu Glu Val Val Asp Glu Val Cys Asp Glu Ser Pro Glu Val His
    130             135             140
Pro Val Ala Glu Val Leu Pro Glu Gln Pro Val Leu Pro Glu Thr Pro
145             150             155                     160
Pro Gln Glu Lys Glu Leu Glu Pro Lys Pro Val Lys Pro Ala Glu Pro
            165             170                     175
Lys Ser Val Val Met Ile Lys Ser Lys Phe Gly Pro Thr Gly Lys His
            180             185             190
Ile Asn His Leu Leu Ala Lys Thr Phe Lys Ala Pro Ala Lys Glu Glu
        195             200             205
Lys Val Val Ala Gly Ser Lys Ser Thr Lys Pro Val Ala Ser Asp Lys
    210             215             220
Thr Gly Lys Pro Gly Thr Ser Glu Gly Gly Glu Gln Asn Asn Arg Glu
225             230             235                     240
Lys Gln Phe Asn Pro Ala Asn Arg Ser Pro Ala Ser Gly Pro Lys Arg
            245             250                     255
```

607

Asp Ala Gly Lys Lys Asn Leu Thr Asp Phe Arg Asp Arg Ser Lys Lys
        260   265   270
Ser Asp Glu Ser Leu Lys Ala Phe Thr Gly Arg Asp Arg Tyr Gly Leu
    275   280   285
Asn Glu Gly Gly Glu Glu Asp Arg Trp Arg Lys Lys Arg Val Tyr Lys
    290   295   300
Pro Lys Lys His Tyr Asp Glu Ala Ser Ile Gln Arg Pro Thr His Ile
305   310   315   320
Lys Ile Ser Leu Pro Ile Thr Val Lys Asp Leu Ala Ala Glu Met Lys
            325   330   335
Leu Lys Ala Ser Glu Val Ile Gln Lys Leu Phe Ile His Gly Met Thr
            340   345   350
Tyr Val Val Asn Asp Ile Leu Asp Ser Glu Thr Ala Val Gln Phe Ile
            355   360   365
Gly Leu Glu Phe Gly Cys Thr Ile Asp Ile Asp Tyr Ser Glu Gln Asp
    370   375   380
Lys Leu Cys Leu Ser Asn Asp Thr Val Arg Asp Glu Ile Gln Ser Thr
385   390   395   400
Asp Pro Ser Lys Leu Val Ile Arg Ser Pro Ile Val Ala Phe Met Gly
            405   410   415
His Val Asp His Gly Lys Thr Thr Leu Ile Asp Ser Leu Arg Lys Ser
            420   425   430
Asn Val Ala Ala Thr Glu Ala Gly Ala Ile Thr Gln His Met Gly Ala
        435   440   445
Phe Cys Cys Ser Thr Pro Val Gly Asp Ile Thr Ile Leu Asp Thr Pro
    450   455   460
Gly His Glu Ala Phe Ser Ala Met Arg Ala Arg Gly Ala Glu Val Cys
465   470   475   480
Asp Ile Val Val Leu Val Val Ala Gly Asp Glu Gly Ile Lys Glu Gln
            485   490   495
Thr Leu Glu Ala Ile Glu His Ala Lys Ala Ala Asp Ile Ala Ile Val
            500   505   510
Val Ala Ile Asn Lys Cys Asp Lys Pro Asn Phe Asn Ser Glu Thr Ile
        515   520   525
Tyr Arg Gln Leu Ser Glu Ile Asn Leu Leu Pro Glu Ala Trp Gly Gly
    530   535   540
Ser Thr Val Thr Val Asn Thr Ser Ala Lys Thr Gly Glu Gly Leu Ser
545   550   555   560
Glu Leu Leu Glu Met Leu Ala Leu Gln Ala Glu Val Leu Glu Leu Lys
            565   570   575
Ala Asp Pro Ser Ala Arg Ala Arg Gly Leu Val Ile Glu Ser Glu Leu
            580   585   590
His Lys Gly Leu Gly Pro Val Ala Thr Val Leu Ile Gln Asn Gly Ser
            595   600   605
Leu Lys Leu Gly Glu Ala Leu Val Phe Asn Asp Cys Tyr Gly Lys Val
    610   615   620
Lys Thr Met His Asn Glu His Asn Glu Leu Met Lys Glu Ala Gly Pro
625   630   635   640
Ser Ile Pro Val Leu Ile Thr Gly Leu Ser Asp Ile Pro Lys Ala Gly
            645   650   655
Asp Pro Phe Phe Val Val Lys Asn Glu Lys Thr Ala Arg Asp Ile Ile
            660   665   670
Glu Ala Arg Ser Ala Gly Gln Gln Arg Phe Ala Leu Gln Gln Lys Lys
    675   680   685
Arg Pro Asn Phe Asp Ser Met Leu Gln Asn Lys Lys Thr Leu Lys Leu
    690   695   700
Met Ile Lys Ala Asp Val Gln Gly Ser Ile Glu Ala Leu Val Ser Ser
705   710   715   720
Ile Ser Lys Ile Lys Ser Glu Lys Val Asp Val Glu Ile Leu Thr Asn
            725   730   735

608

Ser Val Gly Glu Ile Ser Glu Ser Asp Ile Arg Leu Ala Ala Ala Ser
            740   745   750
Lys Ala Val Leu Ile Gly Phe His Thr Gly Ile Glu Ser His Ala Glu
            755   760   765
Pro Leu Ile Lys Ser Leu Gly Val Arg Val Glu Leu Phe Thr Val Ile
        770   775   780
Tyr His Ala Ile Asp Ala Ile Lys Glu Ile Met Thr Ser Leu Leu Asp
785   790   795   800
Pro Ile Ala Glu Glu Lys Asp Glu Gly Ser Ala Glu Ile Lys Glu Ile
                805   810   815
Phe Arg Ser Ser Gln Val Gly Ser Ile Tyr Gly Cys Ile Val Thr Glu
            820   825   830
Gly Ile Met Thr Arg Asn His Lys Val Arg Val Leu Arg Asn Lys Glu
        835   840   845
Ile Leu Trp Lys Gly Thr Leu Ser Ser Leu Lys Arg Val Lys Glu Asp
    850   855   860
Val Lys Glu Val Arg Lys Gly Leu Glu Cys Gly Ile Leu Leu Glu Gly
865   870   875   880
Tyr Gln Gln Ala Gln Ile Gly Asp Val Leu Gln Cys Tyr Glu Val Ile
            885   890   895
Tyr His Pro Gln Lys Leu
            900

        <210> 320
        <211> 141
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 320
Val Met Ser Tyr Asn Val Met Lys Leu Ser Ile Ile His Lys Asn Tyr
1   5   10   15
Asn Leu Lys Tyr Cys Met Thr Glu Asn Arg Arg Ile Lys Arg Val Asn
        20   25   30
Ala Leu Leu Gln Glu Ala Ile Ala Lys Val Ile Leu Lys Asp Val Lys
        35   40   45
His Pro Lys Ile Ser Asn Leu Trp Ile Thr Val Thr Arg Val Ser Leu
    50   55   60
Ser Lys Asp Leu His Ser Ala Arg Val Tyr Val Ser Val Met Pro His
65   70   75   80
Glu Asn Thr Lys Glu Glu Ala Leu Glu Ala Leu Lys Val Ser Ala Gly
                85   90   95
Phe Ile Ala His Arg Ala Ser Lys Asn Val Val Leu Lys Tyr Phe Pro
            100   105   110
Glu Leu His Phe Tyr Leu Asp Asp Ile Phe Ser Pro Gln Asp Tyr Ile
        115   120   125
Glu Asn Leu Leu Trp Gln Ile Gln Glu Lys Glu Lys Ser
    130   135   140

        <210> 321
        <211> 249
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 321
Thr Ile Phe Phe Gly Asn Leu Asn Thr Ile Lys Asp Met Thr Met Asp
1   5   10   15
Leu Ala Val Glu Leu Lys Glu Gly Ile Leu Leu Val Asp Lys Pro Gln
        20   25   30
Gly Arg Thr Ser Phe Ser Leu Ile Arg Ala Leu Thr Lys Leu Ile Gly
        35   40   45

Val Lys Lys Ile Gly His Ala Gly Thr Leu Asp Pro Phe Ala Thr Gly
50   55   60
Val Met Val Met Leu Ile Gly Arg Lys Phe Thr Arg Leu Ser Asp Ile
65   70   75   80
Leu Leu Phe Glu Asp Lys Glu Tyr Glu Ala Ile Ala His Leu Gly Thr
            85   90   95
Thr Thr Asp Ser Tyr Asp Cys Asp Gly Lys Val Val Gly Arg Ser Lys
            100   105   110
Lys Ile Pro Ser Leu Glu Glu Val Leu Ser Ala Ala Glu Tyr Phe Gln
        115   120   125
Gly Glu Ile Gln Gln Leu Pro Pro Met Phe Ser Ala Lys Lys Val Gln
    130   135   140
Gly Lys Lys Leu Tyr Glu Tyr Ala Arg Lys Gly Leu Ser Ile Glu Arg
145   150   155   160
His His Ser Thr Val Gln Val His Leu Gln Ile Thr Lys Tyr Glu Tyr
            165   170   175
Pro Leu Leu His Phe Val Val Ser Cys Ser Lys Gly Thr Tyr Ile Arg
            180   185   190
Ser Ile Ala His Glu Leu Gly Thr Met Leu Gly Cys Gly Ala Tyr Leu
        195   200   205
Glu Gln Leu Arg Arg Leu Arg Ser Gly Arg Phe Ser Ile Asp Glu Cys
    210   215   220
Ile Asp Gly Asn Leu Leu Asp His Pro Asp Phe Asp Ile Ser Pro Tyr
225   230   235   240
Leu Arg Asp Ala His Gly Asn Ser Leu
                    245

<210> 322
<211> 320
<212> PRT
<213> Chlamydia pneumoniae

<400> 322
Thr Thr Pro Ile Ser Ile Phe Leu Pro Thr Tyr Glu Met Pro Met Glu
1   5   10   15
Ile Ala Tyr Ser Leu Thr Ser Ser Phe Ser Val Asp Ser Val Thr Val
            20   25   30
Gly Phe Phe Asp Gly Cys His Leu Gly His Ser Asn Leu Leu Ser Ile
        35   40   45
Leu Thr Ser Tyr Ser Gly Ser Ser Gly Val Ile Thr Phe Asp Ser His
    50   55   60
Pro Gln Thr Val Leu Ser Leu Asn His Thr Lys Leu Ile Asn Thr Lys
65   70   75   80
Glu Glu Arg Leu Gln Leu Leu Gln Thr Phe Pro Ile Asp Trp Leu Gly
            85   90   95
Val Leu Thr Phe Asp Leu Asn Phe Ala Asn Gln Ser Ala Glu Glu Phe
            100   105   110
Leu Thr Leu Leu His Arg Asn Leu Lys Cys Lys Arg Leu Ile Leu Gly
        115   120   125
Tyr Asp Ser Cys Ile Gly Lys Glu Gln Gln Ser Asn Thr Glu Ala Leu
    130   135   140
Asp Thr Ile Gly Lys Pro Leu Gly Ile Glu Val Ile Lys Ile Pro Pro
145   150   155   160
Tyr Arg Met Asp Asn Ile Val Val Ser Ser Lys Ala Ile Arg Gln Phe
            165   170   175
Leu Ser Ala Gly Asn Leu Glu Cys Ala His Arg Phe Leu Gly His Pro
        180   185   190
Tyr Ala Ile Ser Gly Lys Ile Thr Glu Gly Ser Gly Ile Gly Gly Ser
        195   200   205
Leu Gly Phe Ala Thr Ile Asn Leu Pro Arg Glu Glu Ser Leu Ile Pro
    210   215   220

610

Leu Gly Val Tyr Ala Cys Glu Ile Arg Tyr Asp Ser Thr Thr Cys Gln
225   230   235   240
Gly Val Met Asn Leu Gly Thr Ala Pro Thr Phe Gly Arg Glu Ser Leu
                245   250   255
Tyr Ala Glu Ala His Ile Phe Ser Phe Ala Glu Asn Leu Tyr Gly Lys
                260   265   270
Glu Val Ser Ile Ile Pro Arg Lys Phe Leu Arg Glu Glu Lys Lys Phe
                275   280   285
Gln Ser Lys Glu Thr Leu Ile Arg Ala Ile Glu Lys Asp Ile Leu Asp
                290   295   300
Ala Gln Asp Trp Phe Ala Lys Gly Ser Phe Asn Tyr Glu Gly Thr Ala
305   310   315   320

<210> 323
<211> 378
<212> PRT
<213> Chlamydia pneumoniae

<400> 323
Tyr Ser Lys Lys His Val Ile Ile Phe Ile Phe Arg Cys Leu Met Ser
1   5   10   15
His Thr Glu Cys Gly Ile Val Gly Leu Pro Asn Val Gly Lys Ser Gly
                20   25   30
Leu Phe Asn Ala Leu Thr Gly Ala Gln Val Ala Ser Cys Asn Tyr Pro
                35   40   45
Phe Cys Thr Ile Asp Pro Asn Val Gly Ile Val Pro Val Ile Asp Glu
        50   55   60
Arg Leu Glu Ala Leu Ala Lys Ile Ser Asn Ser Gln Lys Ile Ile Tyr
65   70   75   80
Ala Asp Met Lys Phe Val Asp Ile Ala Gly Leu Val Lys Gly Ala Ser
                85   90   95
Asp Gly Ala Gly Leu Gly Asn Arg Phe Leu Ser His Ile Arg Glu Thr
                100   105   110
His Ala Ile Ala His Val Val Arg Cys Phe Asp Asp Pro Asp Val Thr
        115   120   125
His Val Ser Gly Lys Val Asn Pro Val Glu Asp Ile Glu Val Ile Asn
130   135   140
Leu Glu Leu Ile Phe Ser Asp Phe Ser Ser Ala Lys Asn Ile His Ser
145   150   155   160
Lys Leu Glu Lys Leu Ala Lys Gly Lys Arg Glu Val Gly Ala Leu Leu
                165   170   175
Pro Leu Phe Asp Thr Ile Ile Ala His Leu Glu Lys Gly Leu Pro Leu
                180   185   190
Arg Thr Leu Glu Leu Thr Pro Glu Gln Ile Val Ala Leu Lys Pro Tyr
        195   200   205
Pro Phe Leu Thr Met Lys Pro Met Phe Tyr Ile Ala Asn Val Asp Glu
        210   215   220
Ser Ser Leu Pro Asp Met Asp Asn Asp Tyr Val Ala Ala Val Arg Glu
225   230   235   240
Val Ala Ala Lys Glu Asn Ser Lys Val Val Pro Ile Cys Val Arg Ile
                245   250   255
Glu Glu Glu Ile Val Ser Leu Pro Ile Glu Glu Arg Leu Glu Phe Leu
                260   265   270
Met Ser Leu Gly Leu Glu Lys Ser Gly Leu His Arg Leu Val Arg Ala
        275   280   285
Ala Tyr Asp Thr Leu Gly Leu Ile Ser Tyr Phe Thr Thr Gly Pro Gln
        290   295   300
Glu Ser Arg Ala Trp Thr Val Val Arg Gly Ser Ser Ala Trp Glu Ala
305   310   315   320
Ala Gly Glu Ile His Thr Asp Ile Gln Lys Gly Phe Ile Arg Ala Glu
                325   330   335

611

Val Ile Thr Phe Glu Asp Met Ile Glu Cys Gln Gly Arg Ala Ala Ala
        340   345   350
Arg Glu Leu Gly Lys Leu His Ile Glu Gly Arg Asp Tyr Ile Val Gln
        355   360   365
Asp Gly Asp Thr Met Leu Phe Leu His Asn
    370   375

      <210> 324
      <211> 366
      <212> PRT
      <213> Chlamydia pneumoniae

      <400> 324
Ser Asn Leu Gly Asn Ser Met Gly Glu Lys Thr Glu Lys Ala Thr Pro
1   5   10   15
Lys Arg Leu Arg Asp Ala Arg Lys Lys Gly Gln Val Ala Lys Ser Gln
        20   25   30
Asp Phe Pro Ser Ala Val Thr Phe Ile Val Ser Met Phe Thr Ala Phe
    35   40   45
Ser Leu Ser Thr Phe Phe Phe Lys His Leu Gly Gly Phe Leu Val Ser
    50   55   60
Met Leu Ser Gln Ala Pro Thr Arg His Asp Pro Val Ile Thr Leu Phe
65   70   75   80
Tyr Leu Lys Asn Cys Leu Met Leu Ile Leu Thr Ala Ser Leu Pro Leu
            85   90   95
Leu Gly Ala Val Ala Val Val Gly Val Ile Val Gly Phe Leu Ile Val
        100   105   110
Gly Pro Thr Phe Ser Thr Glu Val Phe Lys Pro Asp Ile Lys Lys Phe
        115   120   125
Asn Pro Ile Glu Asn Ile Lys Gln Lys Phe Lys Ile Lys Thr Leu Ile
    130   135   140
Glu Leu Ile Lys Ser Ile Leu Lys Ile Phe Gly Ala Ala Leu Ile Leu
145   150   155   160
Tyr Ile Thr Leu Lys Ser Lys Val Ser Leu Ile Ile Glu Thr Ala Gly
            165   170   175
Val Ser Pro Ile Ile Thr Ala Gln Ile Phe Lys Glu Ile Phe Tyr Lys
        180   185   190
Ala Val Thr Ser Ile Gly Ile Phe Phe Leu Ile Val Ala Ile Leu Asp
        195   200   205
Leu Val Tyr Gln Arg His Asn Phe Ala Lys Glu Leu Lys Met Glu Lys
    210   215   220
Phe Glu Val Lys Gln Glu Phe Lys Asp Thr Glu Gly Asn Pro Glu Ile
225   230   235   240
Lys Gly Arg Arg Arg Gln Ile Ala Gln Glu Ile Ala Tyr Glu Asp Ser
            245   250   255
Ser Ser Gln Val Lys His Ala Ser Thr Val Val Ser Asn Pro Lys Asp
        260   265   270
Ile Ala Val Ala Ile Gly Tyr Met Pro Glu Lys Tyr Lys Ala Pro Trp
        275   280   285
Ile Ile Ala Met Gly Ile Asn Leu Arg Ala Lys Arg Ile Leu Asp Glu
    290   295   300
Ala Glu Lys Tyr Gly Ile Pro Ile Met Arg Asn Val Pro Leu Ala His
305   310   315   320
Gln Leu Leu Asp Glu Gly Lys Glu Leu Lys Phe Ile Pro Glu Ser Thr
            325   330   335
Tyr Glu Ala Ile Gly Glu Ile Leu Leu Tyr Ile Thr Ser Leu Asn Ala
        340   345   350
Gln Asn Pro Asn Asn Lys Asn Thr Asn Gln Pro Asp His Leu
    355   360   365

612

<210> 325
<211> 713
<212> PRT
<213> Chlamydia pneumoniae

<400> 325

```
Ser Phe Ile Met Asn Lys Leu Leu Asn Phe Val Ser Arg Thr Leu Gly
1               5                   10                  15
Gly Asp Thr Ala Leu Asn Met Ile Asn Lys Ser Ser Asp Leu Ile Leu
            20                  25                  30
Ala Leu Trp Met Met Gly Val Val Leu Met Ile Ile Ile Pro Leu Pro
            35                  40                  45
Pro Pro Ile Val Asp Leu Met Ile Thr Ile Asn Leu Ser Ile Ser Val
    50                  55                  60
Phe Leu Leu Met Val Ala Leu Tyr Ile Pro Ser Ala Leu Gln Leu Ser
65                  70                  75                  80
Val Phe Pro Ser Leu Leu Leu Ile Thr Thr Met Phe Arg Leu Gly Ile
                85                  90                  95
Asn Ile Ser Ser Ser Arg Gln Ile Leu Leu Lys Ala Tyr Ala Gly His
            100                 105                 110
Val Ile Gln Ala Phe Gly Asp Phe Val Val Gly Gly Asn Tyr Val Val
        115                 120                 125
Gly Phe Ile Ile Phe Leu Ile Ile Thr Ile Ile Gln Phe Ile Val Val
    130                 135                 140
Thr Lys Gly Ala Glu Arg Val Ala Glu Val Ala Ala Arg Phe Arg Leu
145                 150                 155                 160
Asp Ala Met Pro Gly Lys Gln Met Ala Ile Asp Ala Asp Leu Arg Ala
                165                 170                 175
Gly Met Ile Asp Ala Thr Gln Ala Arg Asp Lys Arg Ala Gln Ile Gln
            180                 185                 190
Lys Glu Ser Glu Leu Tyr Gly Ala Met Asp Gly Ala Met Lys Phe Ile
        195                 200                 205
Lys Gly Asp Val Ile Ala Gly Ile Val Ile Ser Leu Ile Asn Ile Val
    210                 215                 220
Gly Gly Leu Thr Ile Gly Val Ala Met His Gly Met Asp Leu Ala Gln
225                 230                 235                 240
Ala Ala His Val Tyr Thr Leu Leu Ser Ile Gly Asp Gly Leu Val Ser
                245                 250                 255
Gln Ile Pro Ser Leu Leu Ile Ala Leu Thr Ala Gly Ile Val Thr Thr
            260                 265                 270
Arg Val Ser Ser Asp Lys Asn Thr Asn Leu Gly Lys Glu Ile Ser Thr
    275                 280                 285
Gln Leu Val Lys Glu Pro Arg Ala Leu Leu Leu Ala Gly Ala Ala Thr
290                 295                 300
Leu Gly Val Gly Phe Phe Lys Gly Phe Pro Leu Trp Ser Phe Ser Ile
305                 310                 315                 320
Leu Ala Leu Ile Phe Val Ala Leu Gly Ile Leu Leu Leu Thr Lys Lys
                325                 330                 335
Ser Ala Ala Gly Lys Lys Gly Gly Gly Ser Gly Ala Ser Thr Thr Val
            340                 345                 350
Gly Ala Ala Gly Asp Gly Ala Ala Thr Val Gly Asp Asn Pro Asp Asp
        355                 360                 365
Tyr Ser Leu Thr Leu Pro Val Ile Leu Glu Leu Gly Lys Asp Leu Ser
    370                 375                 380
Lys Leu Ile Gln His Lys Thr Lys Ser Gly Gln Ser Phe Val Asp Asp
385                 390                 395                 400
Met Ile Pro Lys Met Arg Gln Ala Leu Tyr Gln Asp Ile Gly Ile Arg
                405                 410                 415
Tyr Pro Gly Ile His Val Arg Thr Asp Ser Pro Ser Leu Glu Gly Tyr
            420                 425                 430
```

613

```
Asp Tyr Met Ile Leu Leu Asn Glu Val Pro Tyr Val Arg Gly Lys Ile
        435                 440                 445
Pro Pro His His Val Leu Thr Asn Glu Val Glu Asp Asn Leu Ser Arg
    450                 455                 460
Tyr Asn Leu Pro Phe Ile Thr Tyr Lys Asn Ala Ala Gly Leu Pro Ser
465                 470                 475                 480
Ala Trp Val Ser Glu Asp Ala Lys Ala Ile Leu Glu Lys Ala Ala Ile
            485                 490                 495
Lys Tyr Trp Thr Pro Leu Glu Val Ile Ile Leu His Leu Ser Tyr Phe
        500                 505                 510
Phe His Lys Ser Ser Gln Glu Phe Leu Gly Ile Gln Glu Val Arg Ser
        515                 520                 525
Met Ile Glu Phe Met Glu Arg Ser Phe Pro Asp Leu Val Lys Glu Val
    530                 535                 540
Thr Arg Leu Ile Pro Leu Gln Lys Leu Thr Glu Ile Phe Lys Arg Leu
545                 550                 555                 560
Val Gln Glu Gln Ile Ser Ile Lys Asp Leu Arg Thr Ile Leu Glu Ser
                565                 570                 575
Leu Ser Glu Trp Ala Gln Thr Glu Lys Asp Thr Val Leu Leu Thr Glu
            580                 585                 590
Tyr Val Arg Ser Ser Leu Lys Leu Tyr Ile Ser Phe Lys Phe Ser Gln
        595                 600                 605
Gly Gln Ser Ala Ile Ser Val Tyr Leu Leu Asp Pro Glu Ile Glu Glu
    610                 615                 620
Met Ile Arg Gly Ala Ile Lys Gln Thr Ser Ala Gly Ser Tyr Leu Ala
625                 630                 635                 640
Leu Asp Pro Asp Ser Val Asn Leu Ile Leu Lys Ser Met Arg Asn Thr
                645                 650                 655
Ile Thr Pro Thr Pro Ala Gly Gly Gln Pro Pro Val Leu Leu Thr Ala
            660                 665                 670
Ile Asp Val Arg Arg Tyr Val Arg Lys Leu Ile Glu Thr Glu Phe Pro
        675                 680                 685
Asp Ile Ala Val Ile Ser Tyr Gln Glu Ile Leu Pro Glu Ile Arg Ile
    690                 695                 700
Gln Pro Leu Gly Arg Ile Gln Ile Phe
705                 710
```

        <210> 326
        <211> 407
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 326
```
Tyr Val Val Ala His Arg Arg His Met Ala Ala Ser Gly Gly Thr Gly
1               5                   10                  15
Gly Leu Gly Gly Thr Gln Gly Val Asn Leu Ala Ala Val Glu Ala Ala
        20                  25                  30
Ala Ala Lys Ala Asp Ala Ala Glu Val Val Ala Ser Gln Glu Gly Ser
        35                  40                  45
Glu Met Asn Met Ile Gln Gln Ser Gln Asp Leu Thr Asn Pro Ala Ala
    50                  55                  60
Ala Thr Arg Thr Lys Lys Lys Glu Glu Lys Phe Gln Thr Leu Glu Ser
65                  70                  75                  80
Arg Lys Lys Gly Glu Ala Gly Lys Ala Glu Lys Lys Ser Glu Ser Thr
            85                  90                  95
Glu Glu Lys Pro Asp Thr Asp Leu Ala Asp Lys Tyr Ala Ser Gly Asn
        100                 105                 110
Ser Glu Ile Ser Gly Gln Glu Leu Arg Gly Leu Arg Asp Ala Ile Gly
        115                 120                 125
Asp Asp Ala Ser Pro Glu Asp Ile Leu Ala Leu Val Gln Glu Lys Ile
    130                 135                 140
```

Lys Asp Pro Ala Leu Gln Ser Thr Ala Leu Asp Tyr Leu Val Gln Thr
145   150   155   160
Thr Pro Pro Ser Gln Gly Lys Leu Lys Glu Ala Leu Ile Gln Ala Arg
                165   170   175
Asn Thr His Thr Glu Gln Phe Gly Arg Thr Ala Ile Gly Ala Lys Asn
            180   185   190
Ile Leu Phe Ala Ser Gln Glu Tyr Ala Asp Gln Leu Asn Val Ser Pro
        195   200   205
Ser Gly Leu Arg Ser Leu Tyr Leu Glu Val Thr Gly Asp Thr His Thr
    210   215   220
Cys Asp Gln Leu Leu Ser Met Leu Gln Asp Arg Tyr Thr Tyr Gln Asp
225   230   235   240
Met Ala Ile Val Ser Ser Phe Leu Met Lys Gly Met Ala Thr Glu Leu
                245   250   255
Lys Arg Gln Gly Pro Tyr Val Pro Ser Ala Gln Leu Gln Val Leu Met
                260   265   270
Thr Glu Thr Arg Asn Leu Gln Ala Val Leu Thr Ser Tyr Asp Tyr Phe
            275   280   285
Glu Ser Arg Val Pro Ile Leu Leu Asp Ser Leu Lys Ala Glu Gly Ile
    290   295   300
Gln Thr Pro Ser Asp Leu Asn Phe Val Lys Val Ala Glu Ser Tyr His
305   310   315   320
Lys Ile Ile Asn Asp Lys Phe Pro Thr Ala Ser Lys Val Glu Arg Glu
                325   330   335
Val Arg Asn Leu Ile Gly Asp Asp Val Asp Ser Val Thr Gly Val Leu
            340   345   350
Asn Leu Phe Phe Ser Ala Leu Arg Gln Thr Ser Ser Arg Leu Phe Ser
            355   360   365
Ser Ala Asp Lys Arg Gln Gln Leu Gly Ala Met Ile Ala Asn Ala Leu
    370   375   380
Asp Ala Val Asn Ile Asn Asn Glu Asp Tyr Pro Lys Ala Ser Asp Phe
385   390   395   400
Pro Lys Pro Tyr Pro Trp Ser
                405

        <210> 327
        <211> 151
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 327
Lys Arg Ile Ala Met Gln Asn Gln Tyr Glu Gln Leu Leu Glu Ser Leu
1   5   10   15
Ala Pro Leu Leu Asn Thr Thr Leu Ala Pro Asp Lys Asn Asn Ser Cys
            20   25   30
Leu Ile Arg Phe Ser Asp Thr His Val Pro Val Gln Ile Glu Glu Asp
        35   40   45
Gly Asn Ser Gly Asp Leu Ala Val Ser Thr Leu Leu Gly Thr Leu Pro
    50   55   60
Glu Asn Val Phe Arg Glu Arg Ile Phe Lys Ala Ala Leu Ser Val Asn
65   70   75   80
Gly Ser Phe Gln Ser Ser Ile Lys Gly Ile Leu Gly Tyr Gly Glu Val
            85   90   95
Thr Gln Gln Leu Tyr Leu Ser Asp Ile Leu Ser Met Asn Tyr Leu Asn
        100   105   110
Gly Glu Lys Leu Phe Glu Tyr Leu Lys Leu Phe Ser Leu His Ala Lys
        115   120   125
Ile Trp Met Glu Ser Leu Arg Thr Gly Asn Leu Pro Asp Leu His Val
    130   135   140
Leu Gly Ile Tyr Tyr Val Ala
145   150

615

<210> 328
<211> 536
<212> PRT
<213> Chlamydia pneumoniae

<400> 328

```
Pro Ser Cys Phe Gly Asn Leu Leu Arg Arg Val Asn Val Leu Lys Tyr
1               5                   10                  15
Thr Lys His Ser Pro Ser Ala His Ala Trp Lys Leu Ile Gly Thr Ser
            20                  25                  30
Pro Lys His Gly Ile Tyr Leu Pro Leu Phe Ser Ile His Thr Lys Asn
            35                  40                  45
Ser Cys Gly Ile Gly Glu Phe Leu Asp Leu Ile Pro Leu Ile Ser Trp
        50                  55                  60
Cys Gln Lys Gln Gly Phe Ser Val Ile Gln Leu Leu Pro Leu Asn Asp
65                  70                  75                  80
Thr Gly Glu Asp Thr Ser Pro Tyr Asn Ser Ile Ser Ser Val Ala Leu
                85                  90                  95
Asn Pro Leu Phe Leu Ser Leu Ser Ser Leu Pro Asn Ile Asp Thr Ile
                100                 105                 110
Pro Glu Val Ala Lys Lys Leu Gln Asp Met His Glu Leu Cys Ser Thr
            115                 120                 125
Pro Ser Val Ser Tyr Thr Gln Val Lys Glu Lys Lys Trp Ala Phe Leu
        130                 135                 140
Arg Glu Tyr Tyr Gln Lys Cys Cys Lys Ser Ser Leu Glu Gly Asn Ser
145                 150                 155                 160
Asn Phe Ser Glu Phe Leu Glu Ser Glu Arg Tyr Trp Leu Tyr Pro Tyr
                165                 170                 175
Gly Thr Phe Arg Ala Ile Lys His His Met His Gly Glu Pro Ile Asn
                180                 185                 190
Asn Trp Pro Lys Ser Leu Thr Asp Gln Glu Asn Phe Pro Asp Leu Thr
            195                 200                 205
Lys Lys Phe His Asp Glu Val Leu Phe Phe Ser Tyr Leu Gln Phe Leu
210                 215                 220
Cys Tyr Gln Gln Leu Cys Glu Val Lys Ala Tyr Ala Asp Gln His His
225                 230                 235                 240
Val Leu Leu Lys Gly Asp Leu Pro Ile Leu Ile Ser Lys Asp Ser Cys
                245                 250                 255
Asp Val Trp Tyr Phe Arg Asp Tyr Phe Ser Ser Ser Arg Ser Val Gly
            260                 265                 270
Ala Pro Pro Asp Leu Tyr Asn Ser Glu Gly Gln Asn Trp His Leu Pro
            275                 280                 285
Ile Tyr Asn Phe Ser Gln Leu Ala Lys Asp Asp Tyr Ile Trp Trp Lys
            290                 295                 300
Glu Arg Leu Arg Tyr Ala Gln Asn Phe Tyr Ser Val Tyr Arg Leu Asp
305                 310                 315                 320
His Ile Ile Gly Phe Phe Arg Leu Trp Ile Trp Asp Ser Ser Gly Arg
                325                 330                 335
Gly Arg Phe Ile Pro Asp Asn Pro Lys Asp Tyr Ile Lys Gln Gly Thr
            340                 345                 350
Glu Ile Leu Ser Thr Met Leu Gly Ala Ser Ser Met Leu Pro Ile Gly
            355                 360                 365
Glu Asp Leu Gly Ile Ile Pro Gln Asp Val Lys Thr Thr Leu Thr His
370                 375                 380
Leu Gly Ile Cys Gly Thr Arg Ile Pro Arg Trp Glu Arg Asn Trp Glu
385                 390                 395                 400
Ser Asp Ser Ala Phe Ile Pro Leu Lys Asp Tyr Asn Pro Leu Ser Val
                405                 410                 415
Thr Thr Leu Ser Thr His Asp Ser Asp Thr Phe Ala Gln Trp Trp Leu
            420                 425                 430
```

616

Asn Ser Pro Lys Glu Ala Lys Gln Phe Ala Lys Phe Leu His Leu Pro
        435   440   445
Phe Gln Lys Thr Leu Thr Thr Glu Thr Gln Ile Asp Ile Leu Lys Leu
        450   455   460
Ser His Glu Ser Ala Ser Ile Phe His Ile Asn Leu Phe Asn Asp Tyr
465   470   475   480
Leu Ala Leu Cys Pro Asp Leu Val Ser Lys Asn Leu Gln Arg Glu Arg
        485   490   495
Ile Asn Thr Pro Gly Thr Ile Ser Lys Lys Asn Trp Ser Tyr Arg Val
        500   505   510
Arg Pro Ser Leu Glu Glu Leu Ala Ile His Lys Lys Phe Asn Gly Tyr
        515   520   525
Ile Glu Lys Ile Leu Thr Gly Leu
        530   535

        <210> 329
        <211> 95
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 329
Arg Ile His Arg Lys Asn Met Ser Arg Lys Cys Pro Leu Thr Gly Lys
1   5   10   15
Arg Pro Arg Arg Gly Tyr Ser Tyr Thr Leu Arg Gly Ile Ala Lys Lys
        20   25   30
Lys Lys Gly Ile Gly Leu Lys Val Thr Gly Lys Thr Lys Arg Arg Phe
        35   40   45
Phe Pro Asn Met Leu Thr Lys Arg Leu Trp Ser Thr Glu Glu Asn Arg
        50   55   60
Phe Leu Lys Leu Lys Ile Ser Ala Ser Ala Leu Arg His Ile Asp Lys
65   70   75   80
Leu Gly Leu Glu Lys Val Leu Glu Arg Ala Lys Ser Lys Asn Phe
                85   90   95

        <210> 330
        <211> 591
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 330
Leu Lys Tyr Arg Glu Ile Phe Met Ser Phe Leu Arg Arg His Ile Ser
1   5   10   15
Leu Phe Arg Ser Gln Lys Gln Leu Ile Asp Val Phe Ala Pro Val Ser
        20   25   30
Pro Asn Leu Glu Leu Ala Glu Ile His Arg Arg Val Ile Glu Asp Gln
        35   40   45
Gly Pro Ala Leu Leu Phe His Asn Val Ile Gly Ser Ser Phe Pro Val
        50   55   60
Leu Thr Asn Leu Phe Gly Thr Lys His Arg Val Asp Gln Leu Phe Ser
65   70   75   80
Gln Ala Pro Asp Asn Leu Ile Ala Arg Val Ala His Leu Ile Ser Ser
                85   90   95
Thr Pro Lys Leu Ser Ser Leu Trp Lys Ser Arg Asp Leu Leu Lys Arg
        100   105   110
Ile Ser Ser Leu Gly Leu Lys Lys Ala Arg Phe Arg Arg Phe Pro Phe
        115   120   125
Val Ser Met Ser Ser Val Asn Leu Asp His Leu Pro Leu Leu Thr Ser
        130   135   140
Trp Pro Glu Asp Gly Gly Ala Phe Leu Thr Leu Pro Leu Val Tyr Thr
145   150   155   160

617

Glu Ser Pro Thr Leu Thr Thr Pro Asn Leu Gly Met Tyr Arg Val Gln
165 170 175

Arg Phe Asn Gln Asn Thr Met Gly Leu His Phe Gln Ile Gln Lys Gly
180 185 190

Gly Gly Met His Leu Tyr Glu Ala Glu Gln Lys Lys Gln Asn Leu Pro
195 200 205

Val Ser Val Phe Leu Ser Gly Asn Pro Phe Leu Thr Leu Ser Ala Ile
210 215 220

Ala Pro Leu Pro Glu Asn Val Ser Glu Leu Leu Phe Ala Thr Phe Leu
225 230 235 240

Gln Gly Ala Lys Leu Leu Tyr Lys Lys Thr Asn Asp His Pro His Pro
245 250 255

Leu Leu Tyr Asp Ala Glu Phe Ile Leu Val Gly Glu Ser Pro Ala Gly
260 265 270

Lys Arg Arg Pro Glu Gly Pro Phe Gly Asp His Phe Gly Tyr Tyr Ser
275 280 285

Leu Gln His Asp Phe Pro Glu Phe His Cys His Lys Ile Tyr His Arg
290 295 300

Lys Asp Ala Ile Tyr Pro Ala Thr Val Val Gly Lys Pro Tyr Gln Glu
305 310 315 320

Asp Phe Tyr Ile Gly Asn Lys Leu Gln Glu Tyr Leu Ser Pro Leu Phe
325 330 335

Pro Leu Val Met Pro Gly Val Arg Arg Leu Lys Ser Tyr Gly Glu Ser
340 345 350

Gly Phe His Ala Leu Thr Ala Ala Val Val Lys Glu Arg Tyr Trp Arg
355 360 365

Glu Ser Leu Thr Thr Ala Leu Arg Ile Leu Gly Glu Gly Gln Leu Ser
370 375 380

Leu Thr Lys Phe Leu Met Val Thr Asp Gln Glu Val Pro Leu Asp Arg
385 390 395 400

Phe Ser Val Val Leu Glu Thr Ile Leu Glu Arg Leu Gln Pro Asp Arg
405 410 415

Asp Leu Ile Ile Phe Ser Glu Thr Ala Asn Asp Thr Leu Asp Tyr Thr
420 425 430

Gly Pro Ser Leu Asn Lys Gly Ser Lys Gly Ile Phe Met Gly Ile Gly
435 440 445

Lys Ala Ile Arg Asp Leu Pro His Gly Tyr Gln Gly Gly Lys Ile His
450 455 460

Gly Val Gln Asp Ile Ala Pro Phe Cys Arg Gly Cys Leu Val Leu Glu
465 470 475 480

Thr Ser Leu Glu Asp Arg Cys Ile Lys Ser Leu Leu His His Pro Asp
485 490 495

Leu Lys Ser Trp Pro Leu Ile Ile Leu Ala Asp Asn Leu Arg Glu Thr
500 505 510

Ile Gln Ser Glu Lys Asp Phe Leu Trp Arg Thr Phe Thr Arg Cys Ala
515 520 525

Pro Ala Asn Asp Leu His Ala Leu His Ser His Phe Ala Thr His Arg
530 535 540

Pro Asn Tyr Asn Phe Pro Phe Val Ile Asp Ala Leu Met Lys Pro Ser
545 550 555 560

Tyr Pro Lys Glu Val Glu Val Asp Pro Ser Thr Lys Gln Lys Val Ser
565 570 575

Glu Arg Trp His Ala Tyr Phe Pro Asn Lys Glu Thr Phe Tyr Ile
580 585 590

<210> 331
<211> 354
<212> PRT
<213> Chlamydia pneumoniae

618

<400> 331

```
Lys Met Asn Lys Arg Gln Lys Asp Lys Leu Lys Ile Cys Val Ile Ile
1                   5                  10                  15
Ser Thr Leu Ile Leu Val Gly Ile Phe Ala Arg Ala Pro Arg Gly Asp
            20                  25                  30
Thr Phe Lys Thr Phe Leu Lys Ser Glu Glu Ala Ile Ile Tyr Ser Asn
        35                  40                  45
Gln Cys Asn Glu Asp Met Arg Lys Ile Leu Cys Asp Ala Ile Glu His
    50                  55                  60
Ala Asp Glu Glu Ile Phe Leu Arg Ile Tyr Asn Leu Ser Glu Pro Lys
65                  70                  75                  80
Ile Gln Gln Ser Leu Thr Arg Gln Ala Gln Ala Lys Asn Lys Val Thr
                85                  90                  95
Ile Tyr Tyr Gln Lys Phe Lys Ile Pro Gln Ile Leu Lys Gln Ala Ser
            100                 105                 110
Asn Val Thr Leu Val Glu Gln Pro Pro Ala Gly Arg Lys Leu Met His
        115                 120                 125
Gln Lys Ala Leu Ser Ile Asp Lys Lys Asp Ala Trp Leu Gly Ser Ala
    130                 135                 140
Asn Tyr Thr Asn Leu Ser Leu Arg Leu Asp Asn Asn Leu Ile Leu Gly
145                 150                 155                 160
Met His Ser Ser Glu Leu Cys Asp Leu Ile Ile Thr Asn Thr Ser Gly
                165                 170                 175
Asp Phe Ser Ile Lys Asp Gln Thr Gly Lys Tyr Phe Val Leu Pro Gln
            180                 185                 190
Asp Arg Lys Ile Ala Ile Gln Ala Val Leu Glu Lys Ile Gln Thr Ala
        195                 200                 205
Gln Lys Thr Ile Gln Val Ala Met Phe Ala Leu Thr His Ser Glu Ile
    210                 215                 220
Ile Gln Ala Leu His Gln Ala Lys Gln Arg Gly Ile His Val Asp Ile
225                 230                 235                 240
Ile Ile Asp Arg Ser His Ser Lys Leu Thr Phe Lys Gln Leu Arg Gln
                245                 250                 255
Leu Asn Ile Asn Lys Asp Phe Val Ser Ile Asn Thr Ala Pro Cys Thr
            260                 265                 270
Leu His His Lys Phe Ala Val Ile Asp Asn Lys Thr Leu Leu Ala Gly
        275                 280                 285
Ser Ile Asn Trp Ser Lys Gly Arg Phe Ser Leu Asn Asp Glu Ser Leu
    290                 295                 300
Ile Ile Leu Glu Asn Leu Thr Lys Gln Gln Asn Gln Lys Leu Arg Met
305                 310                 315                 320
Ile Trp Lys Asp Leu Ala Lys His Ser Glu His Pro Thr Val Asp Asp
                325                 330                 335
Glu Glu Lys Glu Ile Ile Glu Lys Ser Leu Pro Val Glu Glu Gln Glu
            340                 345                 350
Ala Ala
```

<210> 332
<211> 243
<212> PRT
<213> Chlamydia pneumoniae

<400> 332

```
Phe Ile Ser Ile Glu Met Leu Leu Leu Ser Arg Gln Leu Phe Ser Val
1                   5                  10                  15
Leu Pro Ser Arg Phe Gln Asp Leu His Val Tyr Arg Phe Lys Glu Ser
            20                  25                  30
Leu Lys Leu Leu Gln Phe Met Thr Met Val Gly Gly Glu Ile Val Val
        35                  40                  45
```

```
Val Leu Ala Glu Ile Lys Glu Glu Asp Leu Arg Ala Arg Lys Leu Pro
    50              55                  60
Val Arg Lys Arg Arg Glu Lys Asn Tyr Leu Arg Ile Phe Arg Val Leu
65              70                  75                      80
Ser Arg Phe Asp Val Met Arg Ile Ile Arg Phe Asp Pro Tyr Gly Ala
                85                  90                  95
Leu Ser Ala Gln Ser Ile Ala Lys Asp Ser Arg Gln Asn Ser Pro Leu
            100             105                 110
Val Glu Lys Ile Ser Glu Glu Ile Ala Thr Asn Glu Ala Ile Arg Leu
            115             120                 125
Ala Leu Leu Ala Ile Gly Asp Arg Glu Gln Glu Glu Lys Lys Gln Arg
    130             135                 140
His Arg Tyr Lys Leu Leu Gly Gln Lys Gln Ala Lys Val Leu Leu Ser
145             150                 155                     160
Gln Leu Arg His Val His Leu Asp Phe Lys Lys Leu Tyr Cys Asp Ser
                165                 170                 175
Lys Lys Lys Glu Asp Gln Glu Lys Asp Glu Lys Asn Lys Gln Lys Arg
            180                 185                 190
Ser Ile Lys Val Thr Lys Lys Lys Gly Ile Ser Leu Gly Ala Ala
    195                 200                 205
Ala Ser Gln Ala Ile Ala Ala Ala Ala Glu Ala Trp Val Ile Ala Arg
    210             215                 220
Asn Lys Gly Val Leu Glu Thr Ala Ser Thr Leu Phe Tyr Gln Lys Asp
225                 230                 235                 240
Glu Glu Ala
```

<210> 333
<211> 584
<212> PRT
<213> Chlamydia pneumoniae

<400> 333
```
Ile Gln Arg Ile Ile Met Ala Val Ser Gly Gly Gly Gly Val Gln Pro
  1           5                   10                  15
Ser Ser Asp Pro Gly Lys Trp Asn Pro Ala Leu Gln Gly Glu Gln Ala
            20                  25                  30
Glu Gly Pro Ser Pro Leu Lys Glu Ser Ile Phe Ser Glu Thr Lys Gln
            35                  40                  45
Ala Ser Ser Ala Ala Lys Gln Glu Ser Leu Val Arg Ser Gly Ser Thr
    50                  55                  60
Gly Met Tyr Ala Thr Glu Ser Gln Ile Asn Lys Ala Lys Tyr Arg Lys
65                  70                  75                      80
Ala Gln Asp Arg Ser Ser Thr Ser Pro Lys Ser Lys Leu Lys Gly Thr
                85                  90                  95
Phe Ser Lys Met Arg Ala Ser Val Gln Gly Phe Met Ser Gly Phe Gly
            100                 105                 110
Ser Arg Ala Ser Arg Val Ser Ala Lys Arg Ala Ser Asp Ser Gly Glu
            115                 120                 125
Gly Thr Ser Leu Leu Pro Thr Glu Met Asp Val Ala Leu Lys Lys Gly
    130                 135                 140
Asn Arg Ile Ser Pro Glu Met Gln Gly Phe Phe Leu Asp Ala Ser Gly
145                 150                 155                 160
Met Gly Gly Ser Ser Ser Asp Ile Ser Gln Leu Ser Leu Glu Ala Leu
                165                 170                 175
Lys Ser Ser Ala Phe Ser Gly Ala Arg Ser Leu Ser Leu Ser Ser Ser
            180                 185                 190
Glu Ser Ser Ser Val Ala Ser Phe Gly Ser Phe Gln Lys Ala Ile Glu
            195                 200                 205
Pro Met Ser Glu Glu Lys Val Asn Ala Trp Thr Val Ala Arg Leu Gly
    210                 215                 220
```

Gly Glu Met Val Ser Ser Leu Leu Asp Pro Asn Val Glu Thr Ser Ser
225   230   235   240
Leu Val Arg Arg Ala Met Ala Thr Gly Asn Glu Gly Met Ile Asp Leu
            245   250   255
Ser Asp Leu Gly Gln Glu Glu Val Ser Thr Ala Met Thr Ser Pro Arg
            260   265   270
Ala Val Glu Gly Lys Val Lys Val Ser Ser Ser Asp Ser Pro Glu Ala
            275   280   285
Asn Pro Thr Gly Ile Pro Asn Ser Asn Thr Leu Glu Arg Ala Glu Lys
            290   295   300
Glu Ala Glu Lys Gln Glu Ser Arg Glu Gln Leu Ser Glu Asp Gln Met
305   310   315   320
Met Leu Ala Arg Ala Met Ala Gly Leu Leu Thr Gly Ala Ala Pro Gln
                325   330   335
Glu Val Leu Ser Asn Ser Val Trp Ser Gly Pro Ser Thr Val Phe Pro
                340   345   350
Pro Pro Lys Phe Ser Gly Thr Leu Pro Thr Gln Arg Ser Gly Asp Lys
            355   360   365
Ser Lys His Lys Ser Pro Gly Ile Glu Lys Ser Thr Asn His Thr Asn
            370   375   380
Phe Ser Pro Leu Arg Glu Gly Thr Val Lys Ser Ala Glu Val Lys Ser
385   390   395   400
Leu Pro His Pro Glu Ser Met Tyr Arg Phe Pro Lys Asp Ser Ile Val
                405   410   415
Ser Arg Glu Glu Pro Glu Ala Val Val Lys Glu Ser Thr Ala Phe Lys
                420   425   430
Asn Pro Glu Asn Ser Ser Gln Asn Phe Leu Pro Ile Ala Val Glu Ser
            435   440   445
Val Phe Pro Lys Glu Ser Gly Thr Gly Gly Ala Leu Gly Ser Asp Ala
            450   455   460
Val Ser Ser Ser Tyr His Phe Leu Ala Gln Arg Gly Val Ser Leu Leu
465   470   475   480
Ala Pro Leu Pro Arg Ala Thr Asp Asp Tyr Lys Glu Lys Leu Glu Ala
                485   490   495
His Lys Gly Pro Gly Gly Pro Pro Asp Pro Leu Ile Tyr Gln Tyr Arg
            500   505   510
Asn Val Ala Val Glu Pro Pro Ile Val Leu Arg Ser Pro Gln Pro Phe
            515   520   525
Ser Gly Ser Ser Arg Leu Ser Val Gln Gly Lys Pro Glu Ala Ala Ser
            530   535   540
Val His Asp Asp Gly Gly Gly Gly Asn Ser Gly Gly Phe Ser Gly Asp
545   550   555   560
Gln Arg Arg Gly Ser Ser Gly Gln Lys Ala Ser Arg Gln Glu Lys Lys
            565   570   575
Gly Lys Lys Leu Ser Thr Asp Ile
            580

        <210> 334
        <211> 47
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 334
Tyr Leu Asp Ser Arg Ile Arg Val Ile Pro Leu Ala Arg Gln Arg Cys
1   5   10   15
Thr Leu Leu His Leu Leu Ala Val Leu Cys Pro Pro Ile Ser Phe Phe
            20   25   30
Thr Gln Gly Val Ser Pro Cys Val Phe Phe Cys Phe Leu Asp Phe
            35   40   45

621

<210> 335
<211> 106
<212> PRT
<213> Chlamydia pneumoniae

<400> 335
Val Asp Phe Phe Val Phe Val Phe Phe Met Gly Lys Pro Lys Lys Ser
1   5   10   15
Arg Thr Asp Arg Ala Leu Ala Gln Glu Ile Gln Lys Lys Ser Thr Glu
            20   25   30
Val Leu Lys Lys Pro Ala Arg Ile Lys Ala Lys Asn Arg Arg Lys Phe
        35   40   45
Leu Ile Ala Lys Glu Gln Lys Thr Leu Lys His Arg Ala Gln Glu Tyr
    50   55   60
Asp Gln Leu Val Arg Ser Leu Leu Asp Ser Gln Lys Lys Asp Thr Asp
65   70   75   80
Lys Val Leu Ile Phe Asn Tyr Glu Asn Gly Phe Val Phe Thr Asp Lys
                85   90   95
Asp His Phe Ser Lys Tyr Ser Ile Arg Leu
            100   105

<210> 336
<211> 172
<212> PRT
<213> Chlamydia pneumoniae

<400> 336
Thr Met Ser Val His Ile Thr Pro Arg Lys Cys Phe Ile Leu Cys Ile
1   5   10   15
Leu Ser Met Phe Thr Leu Pro Thr Leu Phe Pro Lys Ala His Leu Ile
            20   25   30
Leu Phe Ser Pro Tyr Ile Val Leu Cys Phe Tyr Cys Phe Ser Lys Asp
        35   40   45
Lys Gly Leu Val Leu Ala Leu Gly Cys Gly Val Leu Ser Asp Leu Ala
    50   55   60
Leu Gly Ser Arg Gly Val Phe Leu Leu Leu Tyr Pro Leu Thr Ala Leu
65   70   75   80
Ile Thr His Lys Ala His Leu Ile Phe Ser Lys Glu Ser Lys Ala Ala
                85   90   95
Leu Val Ile Val Asn Met Ile Phe Tyr Gly Val Phe Leu Leu Leu Thr
            100   105   110
Ile Pro Met Cys Ala Leu Phe Gly His Glu Val Arg Trp Ser Ile Asp
        115   120   125
Val Leu Met Ile Pro Leu Lys Cys Ser Phe Leu Asp Asn Leu Ile Phe
    130   135   140
Thr Ser Val Ile Tyr Ile Leu Pro Cys Ala Ile Asn Ser Gly Ile His
145   150   155   160
Lys Met Ile Ser Phe Phe Arg Arg Leu Val Cys Tyr
                165   170

<210> 337
<211> 289
<212> PRT
<213> Chlamydia pneumoniae

<400> 337
Glu Ile Gly Met Leu Leu Arg Gly Ile Pro Ala Ala Glu Lys Ile Leu
1   5   10   15
Gln Arg Leu Lys Glu Glu Ile Ser Gln Ser Pro Thr Ser Pro Gly Leu
            20   25   30

622

Ala Val Val Leu Ile Gly Asn Asp Pro Ala Ser Glu Val Tyr Val Gly
              35   40   45
Met Lys Val Lys Lys Ala Thr Glu Ile Gly Ile Ile Ser Lys Ala His
    50   55   60
Lys Leu Pro Ser Asp Ser Thr Leu Ser Ser Val Leu Lys Leu Ile Glu
65   70   75   80
Arg Leu Asn Gln Asp Pro Ser Ile His Gly Ile Leu Val Gln Leu Pro
              85   90   95
Leu Pro Lys His Leu Asp Ser Glu Val Ile Leu Gln Ala Ile Ser Pro
              100   105   110
Asp Lys Asp Val Asp Gly Leu His Pro Val Asn Met Gly Lys Leu Leu
              115   120   125
Leu Gly Asn Phe Asp Gly Leu Leu Pro Cys Thr Pro Ala Gly Ile Ile
    130   135   140
Glu Leu Leu Asn Tyr Tyr Glu Ile Pro Leu Arg Gly Arg His Ala Ala
145   150   155   160
Ile Val Gly Arg Ser Asn Ile Val Gly Lys Pro Leu Ala Ala Leu Met
              165   170   175
Met Gln Lys His Pro Gln Thr Asn Cys Thr Val Thr Val Leu His Ser
              180   185   190
Gln Ser Glu Asn Leu Pro Glu Ile Leu Lys Thr Ala Asp Ile Ile Ile
    195   200   205
Ala Ala Leu Gly Ala Pro Leu Phe Ile Lys Glu Thr Met Val Ala Pro
    210   215   220
His Ala Val Ile Val Asp Val Gly Thr Thr Arg Val Pro Ala Asp Asn
225   230   235   240
Ala Lys Gly Tyr Thr Leu Leu Gly Asp Val Asp Phe Asn Asn Val Val
              245   250   255
Thr Lys Cys Ala Ala Ile Thr Pro Val Pro Gly Gly Val Gly Pro Met
              260   265   270
Thr Val Ala Met Leu Met Ser Asn Thr Trp Arg Cys Tyr Gln Asn Phe
    275   280   285
Ser

        <210> 338
        <211> 341
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 338
Arg Cys Asp Lys Met Arg Ser Asn His Ser Ser Ser Trp Arg Arg Trp
1   5   10   15
Ser His Asp Cys Arg Tyr Ala His Glu Gln Tyr Met Ala Met Leu Pro
              20   25   30
Lys Phe Phe Leu Val Leu Leu Cys Leu Gly Leu Cys Ser Cys Ser Gln
        35   40   45
Lys Thr Thr Thr Ile Glu Gly Glu Gln Met Thr Ile Phe Tyr Arg Ile
    50   55   60
Val Leu Gly Thr Ser Leu Ser Ala Lys Glu Lys Ala Ser Leu Ser Gln
65   70   75   80
Gln Ile Asp Arg Cys Phe His Lys Ile Asp Ser Ile Tyr Asn Asn Trp
              85   90   95
Asn Pro Tyr Ser Glu Leu Ser Ile Ile Asn Arg Ala Pro Ala Asp Val
              100   105   110
Pro Ile Thr Leu Ser Val Glu Leu Ser Glu Phe Leu Asp Gln Val Asp
        115   120   125
Thr Leu Tyr Lys Leu Ser Glu Gly Arg Phe Asp Pro Thr Val Gly Pro
    130   135   140
Leu Lys Thr Leu Trp Leu Leu His Leu Lys Ser Gln Thr Leu Pro Pro
145   150   155   160

```
Lys Asp Val Trp Glu Gln His Tyr Lys Asp Met Gly Trp Gln His Leu
                165                 170                 175
Glu Phe Gln Ser Asn Thr Lys Thr Leu Ile Lys Lys Asn Pro His Val
            180                 185                 190
Gln Ile Asp Leu Cys Gly Val Val Lys Gly Tyr Ala Val Asp Cys Leu
        195                 200                 205
Asn Glu Ile Cys Asn Thr Phe Cys Pro Asn Asn Tyr Val Glu Trp Gly
    210                 215                 220
Gly Glu Ile Lys Thr Ser Gly His His Pro Ser Gly Arg Pro Trp Arg
225                 230                 235                 240
Ile Phe Ser Glu Ala Ala Gly Thr Ile Leu Asp Ile Asp Asp Met Ala
            245                 250                 255
Ile Ala Thr Ser Gly Asn His Ile Gln Lys Trp Cys Val Glu Gly Lys
            260                 265                 270
Ile Tyr Thr His Ile Leu Asp Thr Arg Thr Gly Lys Pro Leu Glu Leu
        275                 280                 285
Ser Ser Tyr Pro Ile Gln Ser Val Ser Val Val His Pro Ser Cys Ala
    290                 295                 300
Tyr Ala Asp Ala Ile Ala Thr Val Leu Met Thr Phe Asp Ser Lys Ile
305                 310                 315                 320
Glu Ala Lys Gln Trp Ala Glu Glu His His Ile Leu Thr Tyr Ile Asn
                325                 330                 335
Asp Gly Ala Ser Ser
                340


        <210> 339
        <211> 189
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 339
Ile Glu Glu Ile Phe Pro Gly Asn Gln Gly Lys Arg Ile Leu Ile Ile
1               5                   10                  15
Val Leu Arg Arg Lys Asn Cys Phe Leu Leu Tyr Trp Phe Leu Ser Pro
            20                  25                  30
Ile Met Gly Glu Asp Leu Met Ala Gln Lys Glu Ile Val Ser Asn Arg
        35                  40                  45
Lys Ala Leu Arg Asn Tyr Glu Val Ile Glu Thr Leu Glu Ala Gly Ile
    50                  55                  60
Val Leu Thr Gly Thr Glu Ile Lys Ser Leu Arg Asp His Gly Gly Asn
65                  70                  75                  80
Leu Gly Asp Ala Tyr Val Ile Val Ser Lys Gly Glu Gly Trp Leu Leu
                85                  90                  95
Asn Ala Ser Ile Ala Pro Tyr Arg Phe Gly Asn Ile Tyr Asn His Glu
            100                 105                 110
Glu Arg Arg Lys Arg Lys Leu Leu Leu His Arg Tyr Glu Leu Arg Lys
        115                 120                 125
Leu Glu Gly Lys Ile Ala Gln Lys Gly Met Thr Leu Ile Pro Leu Gly
    130                 135                 140
Met Phe Leu Ser Arg Gly Tyr Val Lys Val Arg Leu Gly Cys Cys Arg
145                 150                 155                 160
Gly Lys Lys Ala Tyr Asp Lys Arg Arg Thr Ile Ile Glu Arg Glu Lys
                165                 170                 175
Glu Arg Glu Val Ala Ala Ala Met Lys Arg Arg His His
            180                 185


        <210> 340
        <211> 368
        <212> PRT
        <213> Chlamydia pneumoniae
```

624

<400> 340

```
Glu Asn Met Lys Phe Val Val Ser Arg Asn Glu Leu Gly Asn Leu Ile
1                   5                   10                  15
Lys Lys Ile Gln Ser Val Val Pro Gln Asn Thr Pro Ile Pro Val Leu
            20                  25                  30
Thr His Val Leu Ile Glu Thr Tyr Asn Asp Glu Leu Val Phe Thr Ala
        35                  40                  45
Thr Asp Leu Thr Val Ser Thr Arg Cys Val Thr Lys Ala Lys Val Tyr
    50                  55                  60
Glu Lys Gly Ala Ile Ser Ile Pro Ser Lys Arg Phe Phe Gln Leu Val
65                  70                  75                  80
Lys Glu Leu Thr Glu Ala Asn Leu Glu Ile Ser Ser Ser Ala Gly Glu
            85                  90                  95
Met Ala Gln Ile Thr Ser Gly Ser Ser Cys Phe Arg Leu Leu Ser Met
            100                 105                 110
Glu Lys Glu Asp Phe Pro Met Leu Pro Asp Ile Gln Asn Ala Leu Arg
            115                 120                 125
Phe Ser Leu Pro Ala Glu Gln Leu Lys Thr Met Leu Gln Arg Thr Ser
    130                 135                 140
Phe Ala Val Ser Arg Glu Glu Ser Arg Tyr Val Leu Thr Gly Val Leu
145                 150                 155                 160
Leu Ala Ile Ala Asn Gly Val Ala Thr Ile Val Gly Thr Asp Gly Lys
                165                 170                 175
Arg Leu Ala Lys Ile Asp Ala Glu Val Thr Leu Asp Lys Ser Phe Ser
            180                 185                 190
Gly Glu Tyr Ile Ile Pro Ile Lys Ala Val Glu Glu Ile Ile Lys Met
            195                 200                 205
Cys Ser Asp Glu Gly Glu Ala Ala Ile Phe Leu Asp Gln Asp Lys Ile
    210                 215                 220
Ala Val Glu Cys Asp Asn Thr Leu Leu Ile Thr Lys Leu Leu Ser Gly
225                 230                 235                 240
Glu Phe Pro Asp Phe Ser Pro Val Ile Ser Thr Glu Ser Asn Val Lys
                245                 250                 255
Leu Asp Leu His Arg Glu Glu Leu Ile Thr Leu Leu Lys Gln Val Ala
                260                 265                 270
Leu Phe Thr Asn Glu Ser Ser His Ser Val Lys Phe Ser Phe Leu Pro
            275                 280                 285
Gly Glu Leu Thr Leu Thr Ala Asn Cys Thr Lys Val Gly Glu Gly Lys
            290                 295                 300
Val Ser Met Ala Val Asn Tyr Ser Gly Glu Leu Leu Glu Ile Ala Phe
305                 310                 315                 320
Asn Pro Phe Phe Phe Leu Asp Ile Leu Lys His Ser Lys Asp Glu Leu
                325                 330                 335
Val Ser Leu Gly Ile Ser Asp Ser Tyr Asn Pro Gly Ile Ile Thr Asp
                340                 345                 350
Ser Ala Ser Gly Leu Phe Val Ile Met Pro Met Arg Leu His Asp Asp
            355                 360                 365
```

<210> 341
<211> 210
<212> PRT
<213> Chlamydia pneumoniae

<400> 341

```
Val Thr Thr Leu Pro Met Phe Met Lys Ile Cys Ser Leu Lys Leu Lys
1                   5                   10                  15
Asn Phe Arg Asn His Ser Asp Leu Glu Ile Ser Leu Ala Pro Lys Leu
            20                  25                  30
Asn Tyr Ala Gln Gly Lys Thr Asn Leu Leu Glu Ala Leu Tyr Val Leu
        35                  40                  45
```

Ser Leu Gly Arg Ser Phe Arg Thr Gln His Leu Thr Asp Thr Ile Thr
    50   55   60
Phe Gly Ser Ser His Phe Phe Leu Glu Thr Gln Phe Glu Lys Asp His
65   70   75   80
Leu Pro Gln Ala Leu Ser Ile Tyr Thr Asp Lys Gln Gly Lys Lys Ile
                85   90   95
Cys Tyr Asn Gln Leu Pro Ile Lys Thr Leu Ser Gln Leu Ile Gly Lys
            100   105   110
Val Pro Ile Val Leu Phe Ser Ser Lys Asp Arg Leu Leu Ile Ser Gly
    115   120   125
Ala Pro Ala Asp Arg Arg Leu Phe Leu Asn Leu Leu Leu Ser Gln Cys
    130   135   140
Asp Asn His Tyr Thr Leu Cys Leu Ser Tyr Tyr His Arg Ala Leu Gln
145   150   155   160
Gln Arg Asn Ala Leu Leu Lys Ser Lys Gln Thr Ser Thr Val Ala Ser
                165   170   175
Gly Met Asn Ser Trp Ser Asn Thr Ala Pro Thr Tyr Pro Ser Asn Gly
            180   185   190
Phe Ser Val Val Arg Asn Phe Gln Ile Tyr Pro Lys Asn Phe Gly Leu
    195   200   205
Thr Thr
210

    <210> 342
    <211> 105
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 342
Pro Leu Tyr Pro Leu Leu Ile Val Leu Ser Ser Arg Ser Ser Ala Glu
1   5   10   15
Lys Cys Ser Leu Lys Lys Gln Ala Asn Leu Asn Arg Gly Leu Trp Asp
            20   25   30
Glu Gln Leu Val Lys His Gly Thr Tyr Leu Ser Ile Gln Arg Phe Leu
        35   40   45
Cys Ser Gln Lys Leu Ser Asp Leu Ser Lys Glu Leu Trp Ser Asn Asn
    50   55   60
Leu Lys Glu Gln Leu Ala Leu Lys Phe Lys Ser Ser Leu Ile Lys Asn
65   70   75   80
Ser Asp Ile Ser Glu Thr Ala Val Ala Glu Glu Phe His Lys Gln Leu
                85   90   95
Ser Ile Ser Leu Pro Arg Asp Leu Glu
            100   105

    <210> 343
    <211> 112
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 343
Gly Ser Thr Ser Val Gly Pro His Arg Glu Asp Phe Leu Leu Thr Met
1   5   10   15
Asn Gln Met Pro Val Ser Gln Phe Ser Ser Glu Gly Gln Lys His Ser
            20   25   30
Leu Leu Ala Ile Leu Arg Leu Ala Glu Cys Leu Tyr Leu Lys Gln Ser
        35   40   45
His His Val Ser Pro Leu Val Cys Leu Asp Asp Ile His Ala Gly Leu
    50   55   60
Asp Asn Glu Arg Val Gly Gln Leu Leu Asp Pro Ala Pro Thr Leu Gly
65   70   75   80

626

Gln Thr Leu Ile Thr Ser Thr His Met His Gly Glu Leu Pro Lys Thr
            85   90   95
Ser Leu Val Leu Ser Ile Glu Asn Ala Gln Val Ser Glu Gln Ile Ile
            100   105   110

        <210> 344
        <211> 148
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 344
His Met Lys Lys Phe Leu Leu Thr Ile Leu Phe Leu Ala Val Gly Asn
1   5   10   15
Pro Leu Phe Ser Glu Thr Ser Val Ile Gln Thr Leu Pro Ser Gly Ile
            20   25   30
Gly Gly Leu Lys Glu Thr Ser Lys Gln Lys Glu Ser Val Val Cys Val
        35   40   45
His Ala Phe Leu Arg Ser Tyr Thr Ser Leu Lys Pro Ile Ala Arg Val
    50   55   60
Leu Glu Lys Glu His Tyr Asp Val Phe Ile Trp Asn Tyr Glu Thr Arg
65   70   75   80
Lys Phe Thr Leu Glu Lys His Ala Glu His Leu Asn Arg Leu Leu Lys
            85   90   95
Lys Ile Ala Glu Leu Lys Pro Gly Val Pro Ile Asn Phe Val Thr His
            100   105   110
Ser Ile Gly Gly Val Ile Val Arg Val Ala Leu Ala His Pro Asp Cys
        115   120   125
Pro Glu Glu Ala Lys Lys Glu Lys Leu Phe Ser Trp Leu Leu Arg Thr
    130   135   140
Gln Gly Leu His
145

        <210> 345
        <211> 199
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 345
Leu Pro Arg Arg Ser Gln Lys Arg Lys Ala Ile Leu Met Ala Pro Pro
1   5   10   15
Asn Ala Gly Ser Thr Leu Ala Arg Arg Tyr Arg Cys Val Lys Phe Val
            20   25   30
Gln Phe Val Phe Gly Gly Lys Leu Gly Arg Gln Leu Leu Thr Tyr Cys
        35   40   45
Pro Thr Lys Met Leu Asn Val Gly Lys Leu Pro Ser Ser Leu Asp Val
    50   55   60
Leu Ile Leu Ser Gly Asn Arg His Ser Lys Phe Leu Pro Phe Arg Leu
65   70   75   80
Pro Tyr Glu Asn Asp Gly Lys Val Cys Thr Ile Glu Thr Lys Leu Asp
            85   90   95
Thr Pro His Lys Ala Tyr Val Ile His Thr Ser His Thr Tyr Ile Ile
            100   105   110
Thr Asn Arg Lys Ser Leu Tyr Leu Met Lys Glu Phe Leu Lys Glu Gly
        115   120   125
Asn Thr Thr Pro Ile Ile Glu His Val Pro Glu Ala Ala Leu Glu Gln
    130   135   140
Thr Val Met Glu Asp Lys Gln Lys Asn Ser Arg Leu Lys Pro Tyr Pro
145   150   155   160
Asn Gln Asp Ile Tyr Val Ile His Cys Phe Gly Ser Arg Pro Tyr Asn
            165   170   175

627

Leu Tyr Gly Phe Pro Lys Lys Trp Ser Leu Asn Gln Lys Asn Glu Ile
         180   185   190
Asn Pro Glu Lys Leu Glu Lys
         195

        <210> 346
        <211> 625
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 346
Ser Ser Arg Tyr Met Thr Ile Ile Tyr Phe Ile Leu Ala Ala Leu Ala
1   5   10   15
Leu Gly Ile Leu Val Leu Ile His Glu Leu Gly His Leu Val Val Ala
         20   25   30
Lys Ala Val Gly Met Ala Val Glu Ser Phe Ser Ile Gly Phe Gly Pro
         35   40   45
Ala Leu Phe Lys Lys Arg Ile Gly Gly Ile Glu Tyr Arg Ile Gly Cys
         50   55   60
Ile Pro Phe Gly Gly Tyr Val Arg Ile Arg Gly Met Glu Arg Thr Lys
65   70   75   80
Glu Lys Gly Glu Lys Gly Lys Ile Asp Ser Val Tyr Asp Ile Pro Gln
         85   90   95
Gly Phe Phe Ser Lys Ser Pro Trp Lys Arg Ile Leu Val Leu Val Ala
         100   105   110
Gly Pro Leu Ala Asn Ile Leu Leu Ala Val Leu Ala Phe Ser Ile Leu
         115   120   125
Tyr Met Asn Gly Gly Arg Ser Lys Asn Tyr Ser Asp Cys Ser Lys Val
         130   135   140
Val Gly Trp Val His Pro Val Leu Gln Ala Glu Gly Leu Leu Pro Gly
145   150   155   160
Asp Glu Ile Leu Thr Cys Asn Gly Lys Pro Tyr Val Gly Asp Lys Asp
                 165   170   175
Met Leu Thr Thr Ser Leu Leu Glu Gly His Leu Asn Leu Glu Ile Lys
         180   185   190
Arg Pro Gly Tyr Leu Thr Val Pro Ser Lys Glu Phe Ala Ile Asp Val
         195   200   205
Glu Phe Asp Pro Thr Lys Phe Gly Val Pro Cys Ser Gly Ala Ser Tyr
         210   215   220
Leu Leu Tyr Ser Asn Gln Val Pro Leu Thr Lys Asn Ser Pro Met Glu
225   230   235   240
Asn Ser Glu Leu Arg Pro Asn Asp Arg Phe Val Trp Met Asp Gly Thr
                 245   250   255
Leu Leu Phe Ser Met Ala Gln Ile Ser Gln Ile Leu Asn Glu Ser Tyr
         260   265   270
Ala Phe Val Lys Val Ala Arg Asn Asp Lys Ile Phe Phe Ser Arg Gln
         275   280   285
Pro Arg Val Leu Ala Ser Val Leu His Tyr Thr Pro Tyr Leu Arg Asn
         290   295   300
Glu Leu Ile Asp Thr Gln Tyr Glu Ala Gly Leu Lys Gly Lys Trp Ser
305   - 310   315   320
Ser Leu Tyr Thr Leu Pro Tyr Val Ile Asn Ser Tyr Gly Tyr Ile Glu
                 325   330   335
Gly Glu Leu Thr Ala Ile Asp Pro Glu Ser Pro Leu Pro Gln Pro Gln
         340   345   350
Glu Arg Leu Gln Leu Gly Asp Arg Ile Leu Ala Ile Asp Gly Thr Pro
         355   360   365
Val Ser Gly Ser Val Asp Ile Leu Arg Leu Val Gln Asn His Arg Val
         370   375   380
Ser Ile Ile Val Gln Gln Met Ser Pro Gln Glu Leu Glu Glu Val Asn
385   390   395   400

628

```
Ser Arg Asp Ala Asp Lys Arg Phe Ile Ala Ser Tyr His Ser Glu Asp
                405                 410                 415
Leu Leu Gln Ile Leu Asn His Leu Gly Glu Ser His Pro Val Glu Val
            420                 425                 430
Ala Gly Pro Tyr Arg Leu Leu Asp Pro Val Gln Pro Arg Pro Trp Ile
        435                 440                 445
Asp Val Tyr Ser Ser Glu Ser Leu Asp Lys Gln Leu Glu Val Ala Lys
    450                 455                 460
Lys Ile Lys Asn Lys Asp Lys Gln Arg Tyr Tyr Leu Glu Arg Leu Asp
465                 470                 475                 480
Ala Glu Lys Gln Lys Pro Ser Leu Gly Ile Ser Leu Lys Asp Leu Lys
                485                 490                 495
Val Arg Tyr Asn Pro Ser Pro Val Val Met Leu Ser Asn Ile Thr Lys
            500                 505                 510
Glu Ser Leu Ile Thr Leu Lys Ala Leu Val Thr Gly His Leu Ser Pro
        515                 520                 525
Gln Trp Leu Ser Gly Pro Val Gly Ile Val Gln Val Leu His Thr Gly
    530                 535                 540
Trp Ser Val Gly Phe Ser Glu Val Leu Phe Trp Ile Gly Leu Ile Ser
545                 550                 555                 560
Met Asn Leu Ala Val Leu Asn Leu Leu Pro Ile Pro Val Leu Asp Gly
                565                 570                 575
Gly Tyr Ile Leu Leu Cys Leu Trp Glu Ile Val Lys Arg Arg Arg Leu
            580                 585                 590
Asn Met Lys Ile Val Glu Arg Ile Leu Val Pro Phe Thr Phe Leu Leu
        595                 600                 605
Ile Ile Phe Phe Ile Phe Leu Thr Phe Gln Asp Leu Phe Arg Phe Phe
    610                 615                 620
Gly
625
```

```
Leu Lys Val Ala Cys Leu Lys His Leu Ala Val Leu Gly Ser Thr Gly
1               5                   10                  15
Ser Ile Gly Arg Gln Thr Leu Glu Ile Val Arg Arg Tyr Pro Ser Glu
            20                  25                  30
Phe Lys Ile Ile Ser Met Ala Ser Tyr Gly Asn Asn Leu Arg Leu Phe
        35                  40                  45
Phe Gln Gln Leu Glu Glu Phe Ala Pro Leu Ala Ala Ala Val Tyr Asn
    50                  55                  60
Glu Glu Val Tyr Asn Glu Ala Cys Gln Arg Phe Pro His Met Gln Phe
65                  70                  75                  80
Phe Leu Gly Gln Glu Gly Leu Thr Gln Leu Cys Ile Met Asp Thr Val
                85                  90                  95
Thr Thr Val Val Ala Ala Ser Ser Gly Ile Glu Ala Leu Pro Ala Ile
            100                 105                 110
Leu Glu Ser Met Lys Lys Gly Lys Ala Leu Ala Leu Ala Asn Lys Glu
        115                 120                 125
Ile Leu Val Cys Ala Gly Glu Leu Val Ser Lys Thr Ala Lys Glu Asn
    130                 135                 140
Gly Ile Lys Val Leu Pro Ile Asp Ser Glu His Asn Ala Leu Tyr Gln
145                 150                 155                 160
Cys Leu Glu Gly Arg Thr Ile Glu Gly Ile Lys Lys Leu Ile Leu Thr
                165                 170                 175
Ala Ser Gly Gly Pro Leu Leu Asn Lys Ser Leu Glu Glu Leu Ser Cys
            180                 185                 190
```

Val Thr Lys Gln Asp Val Leu Asn His Pro Ile Trp Asn Met Gly Ser
195   200   205
Lys Val Thr Val Asp Ser Ser Thr Leu Val Asn Lys Gly Leu Glu Ile
210   215   220
Ile Glu Ala Tyr Trp Leu Phe Gly Leu Glu Asn Val Glu Ile Leu Ala
225   230   235   240
Val Ile His Pro Gln Ser Leu Ile His Gly Met Val Glu Phe Leu Asp
245   250   255
Gly Ser Val Ile Ser Ile Met Asn Pro Pro Asp Met Leu Phe Pro Ile
260   265   270
Gln Tyr Ala Leu Thr Ala Pro Glu Arg Phe Ala Ser Pro Arg Asp Gly
275   280   285
Met Asp Phe Ser Lys Lys Gln Thr Leu Glu Phe Phe Pro Val Asp Glu
290   295   300
Glu Arg Phe Pro Ser Ile Arg Leu Ala Gln Gln Val Leu Glu Lys Gln
305   310   315   320
Gly Ser Ser Gly Ser Phe Phe Asn Ala Ala Asn Glu Val Leu Val Arg
325   330   335
Arg Phe Leu Cys Glu Glu Ile Ser Trp Cys Asp Ile Leu Arg Lys Leu
340   345   350
Thr Thr Leu Met Glu Cys His Lys Val Tyr Ala Cys His Ser Leu Glu
355   360   365
Asp Ile Leu Glu Val Asp Gly Glu Ala Arg Ala Leu Ala Gln Glu Ile
370   375   380

        <210> 348
        <211> 329
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 348
Lys Lys Gly Ser Leu Met Ala Leu Gly Pro Ser Pro Tyr Tyr Gly Val
1   5   10   15
Ser Phe Phe Gln Phe Phe Ser Val Phe Phe Ser Arg Leu Phe Ser Gly
                20   25   30
Ser Leu Phe Thr Gly Ser Leu Tyr Ile Asp Asp Ile Gln Ile Ile Val
        35   40   45
Phe Leu Ala Ile Ser Cys Ser Gly Ala Phe Ala Gly Thr Phe Leu Val
    50   55   60
Leu Arg Lys Met Ala Met Tyr Ala Asn Ala Val Ser His Thr Val Leu
65   70   75   80
Phe Gly Leu Val Cys Val Cys Leu Phe Thr His Gln Leu Thr Thr Leu
                85   90   95
Ser Leu Gly Thr Leu Thr Leu Ala Ala Met Ala Thr Ala Met Leu Thr
            100   105   110
Gly Phe Leu Ile Tyr Phe Ile Arg Asn Thr Phe Lys Val Ser Glu Glu
        115   120   125
Ser Ser Thr Ala Leu Val Phe Ser Leu Leu Phe Ser Leu Ser Leu Val
    130   135   140
Leu Leu Val Phe Met Thr Lys Asn Ala His Ile Gly Thr Glu Leu Val
145   150   155   160
Leu Gly Asn Ala Asp Ser Leu Thr Lys Glu Asp Ile Phe Pro Val Thr
                165   170   175
Ile Val Ile Leu Ala Asn Ala Val Ile Thr Ile Phe Ala Phe Arg Ser
            180   185   190
Leu Val Cys Ser Ser Phe Asp Ser Val Phe Ala Ser Ser Leu Gly Ile
        195   200   205
Pro Ile Arg Leu Val Asp Tyr Leu Ile Ile Phe Gln Leu Ser Ala Cys
210   215   220
Leu Val Gly Ala Phe Lys Ala Val Gly Val Leu Met Ala Leu Ala Phe
225   230   235   240

Leu Ile Ile Pro Ser Leu Ile Ala Lys Val Ile Ala Lys Ser Ile Arg
            245   250   255
Ser Leu Met Ala Trp Ser Leu Val Phe Ser Ile Gly Thr Ala Phe Leu
            260   265   270
Ala Pro Ala Ser Ser Arg Ala Ile Leu Ser Ala Tyr Asp Leu Gly Leu
            275   280   285
Ser Thr Ser Gly Ile Ser Val Val Phe Leu Thr Met Met Tyr Ile Val
            290   295   300
Val Lys Phe Ile Ser Tyr Phe Arg Gly Tyr Phe Ser Lys Asn Phe Glu
305   310   315   320
Lys Ile Ser Glu Lys Ser Ser Gln Tyr
                325

        <210> 349
        <211> 467
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 349
Thr Phe Gly Thr Asn Pro Glu Ala Leu Ser Arg Lys Thr Ile Trp Ile
1   5   10   15
Val Leu Ile Met Leu Ser Cys Val Phe Ser Asp Thr Ile Phe Leu Ser
            20   25   30
Ser Phe Leu Ala Val Thr Leu Ile Cys Met Thr Thr Ala Leu Trp Gly
            35   40   45
Thr Ile Leu Leu Ile Ser Lys Gln Pro Leu Leu Ser Glu Ser Leu Ser
        50   55   60
His Ala Ser Tyr Pro Gly Leu Leu Val Gly Ala Leu Met Ala Gln Tyr
65   70   75   80
Val Phe Ser Leu Gln Ala Ser Ile Phe Trp Ile Val Leu Phe Gly Cys
                85   90   95
Ala Ala Ser Val Phe Gly Tyr Gly Ile Ile Val Phe Leu Gly Lys Val
            100   105   110
Cys Lys Leu His Lys Asp Ser Ala Leu Cys Phe Val Leu Val Val Phe
            115   120   125
Phe Ala Ile Gly Val Ile Leu Ala Ser Tyr Val Lys Glu Ser Ser Pro
        130   135   140
Thr Leu Tyr Asn Arg Ile Asn Ala Tyr Leu Tyr Gly Gln Ala Ala Thr
145   150   155   160
Leu Gly Phe Leu Glu Ala Thr Leu Ala Ala Ile Val Phe Cys Ala Ser
                165   170   175
Leu Phe Ala Leu Trp Trp Trp Tyr Arg Gln Ile Val Val Thr Thr Phe
            180   185   190
Asp Lys Asp Phe Ala Val Thr Cys Gly Leu Lys Thr Val Leu Tyr Glu
            195   200   205
Ala Leu Ser Leu Ile Phe Ile Ser Leu Val Ile Val Ser Gly Val Arg
        210   215   220
Ser Val Gly Ile Val Leu Ile Ser Ala Met Phe Val Ala Pro Ser Leu
225   230   235   240
Gly Ala Arg Gln Leu Ser Asp Arg Leu Ser Thr Ile Leu Ile Leu Ser
                245   250   255
Ala Phe Phe Gly Gly Ile Ser Gly Ala Leu Gly Ser Tyr Ile Ser Val
            260   265   270
Ala Phe Thr Cys Arg Ala Ile Ile Gly Gln Gln Ala Val Pro Val Thr
        275   280   285
Leu Pro Thr Gly Pro Leu Val Val Ile Cys Ala Gly Leu Leu Ala Gly
        290   295   300
Leu Cys Leu Leu Phe Ser Pro Lys Ser Gly Trp Val Ile Arg Phe Val
305   310   315   320
Arg Arg Lys His Phe Ser Phe Ser Lys Asp Gln Glu His Leu Leu Lys
                325   330   335

631

Val Phe Trp His Ile Ser His Asn Arg Leu Glu Asn Ile Ser Val Arg
            340   345   350
Asp Phe Val Cys Ser Tyr Lys Tyr Gln Glu Tyr Phe Gly Pro Lys Pro
            355   360   365
Phe Pro Arg Trp Arg Val Gln Ile Leu Glu Trp Arg Gly Tyr Val Lys
    370   375   380
Lys Glu Gln Asp Tyr Tyr Arg Leu Thr Lys Lys Gly Arg Ser Glu Ala
385   390   395   400
Leu Arg Leu Val Arg Ala His Arg Leu Trp Glu Ser Tyr Leu Val Asn
            405   410   415
Ser Leu Asp Phe Ser Lys Glu Ser Val His Glu Leu Ala Glu Glu Ile
            420   425   430
Glu His Val Leu Thr Glu Glu Leu Asp His Thr Leu Thr Glu Ile Leu
            435   440   445
Asn Asp Pro Cys Tyr Asp Pro His Arg Gln Ile Ile Pro Asn Lys Lys
450   455   460
Lys Glu Val
465

        <210> 350
        <211> 263
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 350
Glu Gly Trp Leu Leu Asn Val Lys Asp Glu Thr Phe Trp Ser Val His
1   5   10   15
Asn Leu Cys Val Asn Tyr Glu His Ala Ala Val Leu Tyr His Ile Ser
            20   25   30
Phe Ser Leu Gly Lys Gly Ser Leu Thr Ala Ile Leu Gly Pro Asn Gly
    35   40   45
Ala Gly Lys Ser Thr Leu Leu Lys Ala Ser Leu Gly Leu Ile Lys Pro
    50   55   60
Ser Ser Gly Thr Val Tyr Phe Phe Asn Gln Lys Phe Lys Lys Val Arg
65   70   75   80
Gln Arg Ile Ala Tyr Met Pro Gln Arg Ala Ser Val Asp Trp Asp Phe
            85   90   95
Pro Met Thr Val Leu Asp Leu Ala Leu Met Gly Cys Tyr Ser Tyr Lys
            100   105   110
Gly Met Trp Gly Arg Ile Ser Ser Asp Asp Arg Arg Glu Ala Phe His
            115   120   125
Ile Leu Glu Arg Val Gly Leu Glu Ser Val Ala Asp Arg Gln Ile Gly
    130   135   140
Gln Leu Ser Gly Gly Gln Gln Gln Arg Ala Phe Leu Ala Arg Ala Leu
145   150   155   160
Met Gln Lys Ala Asp Leu Tyr Leu Met Asp Glu Leu Phe Ser Ala Ile
            165   170   175
Asp Met Ala Ser Phe Lys Thr Ser Val Gly Val Leu Gln Glu Leu Arg
            180   185   190
Asp Gln Gly Lys Thr Ile Val Val Val His His Asp Leu Ser His Val
            195   200   205
Arg Gln Leu Phe Asp His Val Val Leu Leu Asn Lys Arg Leu Ile Cys
    210   215   220
Cys Gly Pro Thr Asp Glu Cys Leu Asn Gly Asp Thr Ile Phe Gln Thr
225   230   235   240
Tyr Gly Cys Glu Ile Glu Leu Leu Glu Gln Thr Leu Lys Leu Ser Arg
            245   250   255
Gly Lys Gln Phe Gly Ser Cys
            260

                                    632

<210> 351
<211> 336
<212> PRT
<213> Chlamydia pneumoniae

<400> 351

```
Trp Ile Leu Lys Asn Ala Ser Arg Glu Met Asp Ala Lys Met Gly Tyr
1               5                   10                  15
Ile Phe Lys Val Met Arg Trp Ile Phe Cys Phe Val Ala Cys Gly Ile
            20                  25                  30
Thr Phe Gly Cys Thr Asn Ser Gly Phe Gln Asn Ala Asn Ser Arg Pro
        35                  40                  45
Cys Ile Leu Ser Met Asn Arg Met Ile His Asp Cys Val Glu Arg Val
    50                  55                  60
Val Gly Asn Arg Leu Ala Thr Ala Val Leu Ile Lys Gly Ser Leu Asp
65                  70                  75                  80
Pro His Ala Tyr Glu Met Val Lys Gly Asp Lys Asp Lys Ile Ala Gly
                85                  90                  95
Ser Ala Val Ile Phe Cys Asn Gly Leu Gly Leu Glu His Thr Leu Ser
                100                 105                 110
Leu Arg Lys His Leu Glu Asn Asn Pro Asn Ser Val Lys Leu Gly Glu
        115                 120                 125
Arg Leu Ile Ala Arg Gly Ala Phe Val Pro Leu Glu Glu Asp Gly Ile
    130                 135                 140
Cys Asp Pro His Ile Trp Met Asp Leu Ser Ile Trp Lys Glu Ala Val
145                 150                 155                 160
Ile Glu Ile Thr Glu Val Leu Ile Glu Lys Phe Pro Glu Trp Ser Ala
                165                 170                 175
Glu Phe Lys Ala Asn Ser Glu Glu Leu Val Cys Glu Met Ser Ile Leu
            180                 185                 190
Asp Ser Trp Ala Lys Gln Cys Leu Ser Thr Ile Pro Glu Asn Leu Arg
        195                 200                 205
Tyr Leu Val Ser Gly His Asn Ala Phe Ser Tyr Phe Thr Arg Arg Tyr
    210                 215                 220
Leu Ala Thr Pro Glu Glu Val Ala Ser Gly Ala Trp Arg Ser Arg Cys
225                 230                 235                 240
Ile Ser Pro Glu Gly Leu Ser Pro Glu Ala Gln Ile Ser Val Arg Asp
                245                 250                 255
Ile Met Ala Val Val Asp Tyr Ile Asn Glu His Asp Val Ser Val Val
            260                 265                 270
Phe Pro Glu Asp Thr Leu Asn Gln Asp Ala Leu Lys Lys Ile Val Ser
        275                 280                 285
Ser Leu Lys Lys Ser His Leu Val Arg Leu Ala Gln Lys Pro Leu Tyr
    290                 295                 300
Ser Asp Asn Val Asp Asp Asn Tyr Phe Ser Thr Phe Lys His Asn Val
305                 310                 315                 320
Cys Leu Ile Thr Glu Glu Leu Gly Gly Val Ala Leu Glu Cys Gln Arg
                325                 330                 335
```

<210> 352
<211> 172
<212> PRT
<213> Chlamydia pneumoniae

<400> 352

```
Glu Val Gly Phe Met Ala Val Glu Gln Ser His Ile Lys Glu Glu Ile
1               5                   10                  15
Glu Lys Leu Ile Gly Lys Ala Ile Lys Arg Val Cys Gly Asn Lys Glu
            20                  25                  30
Asn Asp Leu Cys Arg Tyr Leu Pro Gly Pro Ser Gly Gly Tyr Met His
        35                  40                  45
```

633

His Phe Thr Leu Lys Lys Met Lys Ser Ala Ala Pro Glu Gln Leu Leu
    50   55   60
Lys Met Leu Lys Thr Phe Ile Leu Glu Ser Glu Thr Pro Arg Thr Ile
65   70   75   80
Asn Pro Lys Pro Arg Ala Pro Arg Gly Ser Lys Lys Arg Arg Asp Phe
            85   90   95
Ile Asn Phe Thr Lys Thr Asp Ile Glu Arg Val Leu Glu Leu Ala Arg
            100   105   110
Gln Val Gly Asp Lys Asp Leu Leu Ala Arg Phe Ser Pro Lys Lys Pro
        115   120   125
Leu Thr Ser Leu Lys Arg Glu Leu Ile Arg Ser Ile Arg Asn Gly Ile
    130   135   140
Val Ser Val Glu Leu Trp Asn Ala Tyr Val Glu Ala Val Lys Ala Val
145   150   155   160
Ser Ser Pro Asn Leu Glu Val Thr Ser Pro Phe Val
            165   170

        <210> 353
        <211> 524
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 353
Lys Ile Lys Val Phe Gln Arg Val Asn Met Thr Lys Thr Glu Glu Lys
1   5   10   15
Pro Phe Gly Lys Leu Arg Ser Phe Leu Trp Pro Ile His Thr His Glu
            20   25   30
Leu Lys Lys Val Leu Pro Met Phe Leu Met Phe Phe Cys Ile Thr Phe
        35   40   45
Asn Tyr Thr Val Leu Arg Asp Thr Lys Asp Thr Leu Ile Val Gly Ala
    50   55   60
Pro Gly Ser Gly Ala Glu Ala Ile Pro Phe Ile Lys Phe Trp Leu Val
65   70   75   80
Val Pro Cys Ala Ile Ile Phe Met Leu Ile Tyr Ala Lys Leu Ser Asn
            85   90   95
Ile Leu Ser Lys Gln Ala Leu Phe Tyr Ala Val Gly Thr Pro Phe Leu
            100   105   110
Ile Phe Phe Ala Leu Phe Pro Thr Val Ile Tyr Pro Leu Arg Asp Val
        115   120   125
Leu His Pro Thr Glu Phe Ala Asp Arg Leu Gln Ala Ile Leu Pro Pro
    130   135   140
Gly Leu Leu Gly Leu Val Ala Ile Leu Arg Asn Trp Thr Phe Ala Ala
145   150   155   160
Phe Tyr Val Leu Ala Glu Leu Trp Gly Ser Val Met Leu Ser Leu Met
            165   170   175
Phe Trp Gly Phe Ala Asn Glu Ile Thr Lys Ile His Glu Ala Lys Arg
            180   185   190
Phe Tyr Ala Leu Phe Gly Ile Gly Ala Asn Ile Ser Leu Leu Ala Ser
        195   200   205
Gly Arg Ala Ile Val Trp Ala Ser Lys Leu Arg Ala Ser Val Ser Glu
    210   215   220
Gly Val Asp Pro Trp Gly Ile Ser Leu Arg Leu Leu Met Ala Met Thr
225   230   235   240
Ile Val Ser Gly Leu Val Leu Met Ala Ser Tyr Trp Trp Ile Asn Lys
            245   250   255
Asn Val Leu Thr Asp Pro Arg Phe Tyr Asn Pro Glu Glu Met Gln Lys
            260   265   270
Gly Lys Lys Gly Ala Lys Pro Lys Met Asn Met Lys Asp Ser Phe Leu
        275   280   285
Tyr Leu Ala Arg Ser Pro Tyr Ile Leu Leu Leu Ala Leu Leu Val Ile
290   295   300

634

```
Ala Tyr Gly Ile Cys Ile Asn Leu Ile Glu Val Thr Trp Lys Ser Gln
305             310             315             320
Leu Lys Leu Gln Tyr Pro Asn Met Asn Asp Tyr Ser Glu Phe Met Gly
                325             330             335
Asn Phe Ser Phe Trp Thr Gly Val Val Ser Val Leu Ile Met Leu Phe
            340             345             350
Val Gly Gly Asn Val Ile Arg Lys Phe Gly Trp Leu Thr Gly Ala Leu
        355             360             365
Val Thr Pro Val Met Val Leu Leu Thr Gly Ile Val Phe Phe Ala Leu
    370             375             380
Val Ile Phe Arg Asn Gln Ala Ser Gly Leu Val Ala Met Phe Gly Thr
385             390             395             400
Thr Pro Leu Met Leu Ala Val Val Val Gly Ala Ile Gln Asn Ile Leu
            405             410             415
Ser Lys Ser Thr Lys Tyr Ala Leu Phe Asp Ser Thr Lys Glu Met Ala
            420             425             430
Tyr Ile Pro Leu Asp Gln Glu Gln Lys Val Lys Gly Lys Ala Ala Ile
        435             440             445
Asp Val Val Ala Ala Arg Phe Gly Lys Ser Gly Gly Ala Leu Ile Gln
    450             455             460
Gln Gly Leu Leu Val Ile Cys Gly Ser Ile Gly Ala Met Thr Pro Tyr
465             470             475             480
Leu Ala Val Ile Leu Leu Phe Ile Ile Ala Ile Trp Leu Val Ser Ala
            485             490             495
Thr Lys Leu Asn Lys Leu Phe Leu Ala Gln Ser Ala Leu Lys Glu Gln
            500             505             510
Glu Val Ala Gln Glu Asp Ser Ala Pro Ala Ser Ser
    515             520

        <210> 354
        <211> 451
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 354
Trp Val Gly Ile Phe Phe Ile Asn Ser His Phe Thr Asn Ser Tyr Ala
1               5               10              15
Phe Phe Asn Gln Lys Val Ile Ile Thr Val Arg His Ser Gly Cys Thr
                20              25              30
Met Lys Cys Ser Pro Leu Thr Leu Val Pro His Ile Phe Leu Lys Asn
            35              40              45
Asp Cys Glu Cys His Arg Ser Cys Ser Leu Lys Ile Arg Thr Ile Ala
    50              55              60
Arg Leu Ile Leu Gly Leu Val Leu Ala Leu Val Ser Ala Leu Ser Phe
65              70              75              80
Val Phe Leu Ala Ala Pro Ile Ser Tyr Ala Ile Gly Gly Thr Leu Ala
            85              90              95
Leu Ala Ala Ile Val Ile Leu Ile Thr Leu Val Val Ala Leu Leu
            100             105             110
Ala Lys Ser Lys Val Leu Pro Ile Pro Asn Glu Leu Gln Lys Ile Ile
            115             120             125
Tyr Asn Arg Tyr Pro Lys Glu Val Phe Tyr Phe Val Lys Thr His Ser
    130             135             140
Leu Thr Val Asn Glu Leu Lys Ile Phe Ile Asn Cys Trp Lys Ser Gly
145             150             155             160
Thr Asp Leu Pro Pro Asn Leu His Lys Lys Ala Glu Ala Phe Gly Ile
            165             170             175
Asp Ile Leu Lys Ser Ile Asp Leu Thr Leu Phe Pro Glu Phe Glu Glu
            180             185             190
Ile Leu Leu Gln Asn Cys Pro Leu Tyr Trp Leu Ser His Phe Ile Asp
        195             200             205
```

635

```
Lys Thr Glu Ser Val Ala Gly Glu Ile Gly Leu Asn Lys Thr Gln Lys
    210                 215                 220
Val Tyr Gly Leu Leu Gly Pro Leu Ala Phe His Lys Gly Tyr Thr Thr
225                 230                 235                 240
Ile Phe His Ser Tyr Thr Arg Pro Leu Leu Thr Leu Ile Ser Glu Ser
            245                 250                 255
Gln Tyr Lys Phe Leu Tyr Ser Lys Ala Ser Lys Asn Gln Trp Asp Ser
            260                 265                 270
Pro Ser Val Lys Lys Thr Cys Glu Glu Ile Phe Lys Glu Leu Pro His
            275                 280                 285
Asn Met Ile Phe Arg Lys Asp Val Gln Gly Ile Ser Gln Phe Leu Phe
    290                 295                 300
Leu Phe Phe Ser His Gly Ile Thr Trp Glu Gln Ala Gln Met Ile Gln
305                 310                 315                 320
Leu Ile Asn Pro Asp Asn Trp Lys Met Leu Cys Gln Phe Asp Lys Ala
            325                 330                 335
Gly Gly His Cys Ser Met Ala Thr Phe Gly Gly Phe Leu Asn Thr Glu
            340                 345                 350
Thr Asn Met Phe Asp Pro Val Ser Ser Asn Tyr Glu Pro Thr Val Asn
    355                 360                 365
Phe Met Thr Trp Lys Glu Leu Lys Val Leu Leu Glu Lys Val Lys Glu
    370                 375                 380
Ser Pro Met His Pro Ala Ser Ala Leu Val Gln Lys Ile Cys Val·Asn
385                 390                 395                 400
Thr Thr His His Gln Asn Leu Leu Lys Arg Trp Gln Phe Val Arg Asn
            405                 410                 415
Thr Ser Ser Gln Trp Thr Ser Ser Leu Pro Gln Tyr Ala Phe His Ala
            420                 425                 430
Gln Thr Tyr Lys Leu Glu Lys Lys Ile Glu Ser Ser Leu Pro Ile Arg
    435                 440                 445
Ser Ser Leu
    450


        <210> 355
        <211> 81
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 355
Leu Arg Phe Arg Asn Ile Lys Lys Ser Leu Ile Phe Ile Lys Arg Ile
1               5                   10                  15
Arg Tyr Ser Gln Ser Gly Lys Glu Gln Lys Gly Ala Arg Pro Phe Phe
            20                  25                  30
Lys Lys Ser Ile Thr Ser Ser Leu Val Ile Leu Leu Leu Glu Ala Ile
            35                  40                  45
Phe Asn Glu Asn Phe Ser Ser Ile Ile Gln Asn Asn Phe Asn Lys Asn
    50                  55                  60
Phe Lys Asn Lys Asn Ile Ser Ile Asn Arg Ile Phe Val Lys Phe Thr
65                  70                  75                  80
Ile


        <210> 356
        <211> 482
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 356
Tyr Lys Thr Ile Ser Ile Lys Ile Leu Lys Ile Lys Thr Phe Leu Leu
1               5                   10                  15
```

```
Ile Gly Phe Leu Leu Asn Leu Arg Tyr Asn Thr Gln Ile Asp Glu Pro
            20              25              30
Arg Lys Cys Met Ser Asn Ile Thr Ser Pro Val Ile Gln Asn Asn Arg
        35              40              45
Ser Cys Asn Tyr Tyr Phe Glu Leu Lys Asn Ser Thr Thr Ile His Ile
    50              55              60
Val Ile Ser Ala Ile Leu Leu Cys Gly Ala Leu Ile Ala Phe Leu Cys
65              70              75              80
Val Ala Ala Pro Val Ser Tyr Ile Leu Ser Gly Ala Leu Leu Gly Leu
            85              90              95
Gly Leu Leu Ile Ala Leu Ile Gly Val Ile Leu Gly Ile Lys Lys Ile
            100             105             110
Thr Pro Met Ile Ser Ser Lys Glu Gln Val Phe Pro Gln Glu Leu Val
        115             120             125
Asn Arg Ile Arg Ala His Tyr Pro Lys Phe Val Ser Asp Phe Val Ser
    130             135             140
Glu Ala Lys Pro Asn Leu Lys Asp Leu Ile Ser Phe Ile Asp Leu Leu
145             150             155             160
Asn Gln Leu His Ser Glu Val Gly Ser Ser Thr Asn Tyr Asn Val Ser
            165             170             175
Glu Glu Leu Gln Gln Lys Ile Asp Thr Phe Glu Gly Ile Ala Arg Leu
            180             185             190
Lys Asn Glu Val Arg Thr Ala Ser Leu Lys Arg Leu Glu Ser Ala Ala
        195             200             205
Ser Ser Arg Pro Leu Phe Pro Ser Leu Pro Lys Ile Leu Gln Lys Val
    210             215             220
Phe Pro Phe Phe Trp Leu Gly Glu Phe Ile Ser Ala Gly Ser Lys Val
225             230             235             240
Val Glu Leu His Arg Val Lys Lys Ile Gly Gly Ser Leu Glu Glu Asp
            245             250             255
Leu Ser Asp Tyr Ile Lys Pro Glu Met Leu Pro Thr Tyr Trp Leu Ile
            260             265             270
Pro Leu Asp Phe Arg Pro Thr Asn Ser Ser Ile Leu Asn Leu His Thr
        275             280             285
Leu Val Leu Ala Arg Val Leu Thr Arg Asp Val Phe Gln His Leu Lys
    290             295             300
Tyr Ala Ala Leu Asn Gly Glu Trp Asn Leu Asn His Ser Asp Leu Asn
305             310             315             320
Thr Met Lys Gln Gln Leu Phe Ala Lys Tyr His Ala Ala Tyr Gln Ser
            325             330             335
Tyr Lys His Leu Ser Gln Pro Ser Leu Gln Glu Asp Glu Phe Tyr Asn
            340             345             350
Leu Leu Leu Cys Ile Phe Lys His Arg Tyr Ser Trp Lys Gln Met Ser
            355             360             365
Leu Ile Lys Thr Val Pro Ala Asp Leu Trp Glu Asn Leu Cys Cys Leu
            370             375             380
Thr Leu Asp His Thr Gly Arg Pro Gln Asp Met Glu Phe Ala Ser Leu
385             390             395             400
Ile Gly Thr Leu Tyr Thr Gln Gly Leu Ile His Lys Glu Ser Glu Ala
            405             410             415
Phe Leu Ser Ser Leu Thr Leu Leu Ser Leu Asp Gln Phe Lys Thr Ile
            420             425             430
Arg Arg Gln Ser Thr Asn Ile Ala Met Phe Leu Glu Asn Leu Ala Thr
        435             440             445
His Asn Ser Thr Phe Arg Ser Leu Pro Pro Ile Thr Val His Pro Leu
    450             455             460
Lys Arg Ser Val Phe Ser Gln Pro Glu Glu Asp Glu Ser Ser Leu Leu
465             470             475             480
Ile Gly
```

637

<210> 357
<211> 455
<212> PRT
<213> Chlamydia pneumoniae

<400> 357
Ile Arg Asp Phe Tyr Leu His Ile Ile Tyr Thr Ala Phe Asn Arg Ser
1   5   10   15
Ile Ser Lys Glu Leu Ala Met Ser Met Thr Ile Val Pro His Ala Leu
                20   25   30
Phe Lys Asn His Cys Glu Cys His Ser Thr Phe Pro Leu Ser Ser Arg
            35   40   45
Thr Ile Val Arg Ile Ala Ile Ala Ser Leu Phe Cys Ile Gly Ala Leu
        50   55   60
Ala Ala Leu Gly Cys Leu Ala Pro Pro Val Ser Tyr Ile Val Gly Ser
65   70   75   80
Val Leu Ala Phe Ile Ala Phe Val Ile Leu Ser Leu Val Ile Leu Ala
                85   90   95
Leu Ile Phe Gly Glu Lys Lys Leu Pro Pro Thr Pro Arg Ile Ile Pro
            100   105   110
Asp Arg Phe Thr His Val Ile Asp Glu Ala Tyr Gly Leu Ser Ile Ser
            115   120   125
Ala Phe Val Arg Glu Gln Gln Val Thr Leu Ala Glu Phe Arg Gln Phe
            130   135   140
Ser Thr Ala Leu Leu Cys Asn Ile Ser Pro Glu Glu Lys Ile Lys Gln
145   150   155   160
Leu Pro Ser Glu Leu Arg Ser Lys Val Glu Ser Phe Gly Ile Ser Arg
                165   170   175
Leu Ala Gly Asp Leu Glu Lys Asn Asn Trp Pro Ile Phe Glu Asp Leu
            180   185   190
Leu Ser Gln Thr Cys Pro Leu Tyr Trp Leu Gln Lys Phe Ile Ser Ala
            195   200   205
Gly Asp Pro Gln Val Cys Arg Asp Leu Gly Val Pro Arg Glu Cys Tyr
            210   215   220
Gly Tyr Tyr Trp Leu Gly Pro Leu Gly Tyr Ser Thr Ala Lys Ala Thr
225   230   235   240
Ile Phe Cys Lys Glu Thr His His Ile Leu Gln Gln Leu Thr Lys Glu
                245   250   255
Asp Val Leu Leu Leu Lys Asn Lys Ala Leu Gln Glu Lys Trp Asp Thr
            260   265   270
Asp Glu Val Lys Ala Ile Val Glu Arg Ile Tyr Thr Thr Tyr Thr Ala
            275   280   285
Arg Gly Thr Leu Lys Thr Glu Ala Gly Gly Leu Thr Lys Glu Thr Ile
            290   295   300
Ser Lys Glu Leu Leu Leu Leu Ser Leu His Gly Tyr Ser Phe Asp Gln
305   310   315   320
Leu Gln Leu Ile Thr Gln Leu Pro Arg Asp Ala Trp Asp Trp Leu Cys
                325   330   335
Phe Val Asp Asn Ser Thr Ala Tyr Asn Leu Gln Leu Cys Ala Leu Val
            340   345   350
Gly Ala Leu Ser Ser Gln Asn Leu Leu Asp Glu Ser Ser Ile Asp Phe
            355   360   365
Asp Val Asn Leu Gly Leu Tyr Val Ile Gln Asp Leu Lys Glu Ala Val
            370   375   380
Gln Ala Phe Ser Ala Ser Asp Glu Pro Lys Lys Glu Leu Gly Lys Phe
385   390   395   400
Leu Leu Arg His Leu Ser Ser Val Ser Lys Arg Leu Glu Ser Val Leu
                405   410   415
Arg Gln Gly Leu His Arg Ile Ala Leu Glu His Gly Asn Ala Arg Ala
            420   425   430

638

```
Arg Val Tyr Asp Val Asn Phe Val Thr Gly Ala Arg Ile His Arg Lys
        435                 440                 445
Thr Ser Ile Phe Phe Lys Asp
    450                 455


        <210> 358
        <211> 119
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 358
Lys Gln Val Gln Leu Phe Gln Tyr Met Asn Glu Ser Gly Trp Asp Trp
1               5                   10                  15
Leu Cys Asp Phe Asp Ser Gln Gly Glu Gly Phe Gln Leu Ser Arg Leu
        20                  25                  30
Val Gly Leu Leu His Ser Ser Trp Ala Leu Tyr Glu Ala Lys Glu Gln
        35                  40                  45
Phe Tyr Leu Pro Glu Val Ser Leu Leu Thr Trp Glu Glu Leu Ile Glu
    50                  55                  60
Met Gln Leu Leu Ser Lys Pro Thr Lys His Gly Val Ala Lys Asp Leu
65                  70                  75                  80
Cys Asn Val Phe Glu Lys His Phe Gln Arg Phe Arg Gln Tyr Leu Gly
        85                  90                  95
Ser Leu Asp Leu Asn Gln Arg Phe Glu Asn Thr Phe Leu Asn Tyr Pro
        100                 105                 110
Lys Tyr His Leu Asp Arg Glu
        115


        <210> 359
        <211> 291
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 359
Tyr Ser Ser His Asn Gly Ala Ser Met Val Asn Ile Gln Pro Val Tyr
1               5                   10                  15
Arg Asn Thr Gln Val Asn Tyr Ser Gln Ala Thr Gln Phe Ser Val Cys
        20                  25                  30
Gln Pro Ala Leu Ser Leu Ile Ile Val Ser Val Val Ala Ala Val Leu
        35                  40                  45
Ala Ile Val Ala Leu Val Cys Ser Gln Ser Leu Leu Ser Ile Glu Leu
    50                  55                  60
Gly Thr Ala Leu Val Leu Val Ser Leu Ile Leu Phe Ala Ser Ala Met
65                  70                  75                  80
Phe Met Ile Tyr Lys Met Arg Gln Glu Pro Lys Glu Leu Leu Ile Pro
        85                  90                  95
Lys Lys Ile Met Glu Leu Ile Gln Glu His Tyr Pro Ser Ile Val Val
        100                 105                 110
Asp Phe Ile Arg Asp Gln Glu Val Ser Ile Tyr Glu Ile His His Leu
        115                 120                 125
Ile Ser Ile Leu Asn Lys Thr Asn Val Phe Asp Lys Ala Pro Val Tyr
    130                 135                 140
Leu Gln Glu Lys Leu Leu Gln Phe Gly Ile Glu Lys Phe Lys Asp Val
145                 150                 155                 160
His Pro Ser Lys Leu Pro Asn Phe Glu Glu Ile Leu Leu Gln His Cys
                165                 170                 175
Pro Leu His Trp Leu Gly Arg Leu Val Tyr Pro Met Val Ser Asp Val
                180                 185                 190
Thr Pro Gly Thr Tyr Gly Tyr Tyr Trp Cys Gly Pro Leu Gly Leu Tyr
        195                 200                 205
```

639

```
Glu Asn Ala Pro Ser Leu Phe Glu Arg Arg Ser Leu Leu Leu Leu Lys
    210                 215                 220
Lys Ile Ser Phe Gly Glu Phe Ala Leu Leu Glu Asp Gly Leu Lys Lys
225                 230                 235                 240
Asn Thr Trp Ser Ser Ser Glu Leu Val Gln Ile Arg Gln Asn Leu Phe
                245                 250                 255
Thr Arg Tyr Tyr Ala Asp Lys Glu Glu Val Asp Glu Ala Glu Leu Asn
                260                 265                 270
Ala Asp Tyr Glu Gln Phe Asp Ser Leu Leu His Leu Ile Phe Ser His
        275                 280                 285
Lys Leu Ser
    290


        <210> 360
        <211> 60
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 360
Glu Glu Val Leu Ser Val Ser Met Lys Leu Ile Pro Thr Gln Asp Ser
    1           5                   10                  15
Ile Glu Arg Glu Thr Asp Ser Lys Arg Asp Lys Lys Ile Phe Thr Ile
                20                  25                  30
Tyr Ile Cys Ser Ser Lys Val Leu Ala Gly His Phe Phe Ser His Leu
        35                  40                  45
Asp Lys His Asn Lys Ile His Glu Ser Ile Gly Val
    50                  55                  60


        <210> 361
        <211> 608
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 361
Ile Thr Leu Gln Tyr Ile Leu Lys Glu Tyr Lys Ile Glu Asn Ile Arg
    1           5                   10                  15
Asn Phe Ser Ile Ile Ala His Ile Asp His Gly Lys Ser Thr Ile Ala
                20                  25                  30
Asp Arg Leu Leu Glu Ser Thr Ser Thr Val Glu Glu Arg Glu Met Arg
        35                  40                  45
Glu Gln Leu Leu Asp Ser Met Asp Leu Glu Arg Glu Arg Gly Ile Thr
    50                  55                  60
Ile Lys Ala His Pro Val Thr Met Thr Tyr Leu Tyr Glu Gly Glu Val
65                  70                  75                  80
Tyr Gln Leu Asn Leu Ile Asp Thr Pro Gly His Val Asp Phe Ser Tyr
                85                  90                  95
Glu Val Ser Arg Ser Leu Ser Ala Cys Glu Gly Ala Leu Leu Ile Val
                100                 105                 110
Asp Ala Ala Gln Gly Val Gln Ala Gln Ser Leu Ala Asn Val Tyr Leu
        115                 120                 125
Ala Leu Glu Arg Asp Leu Glu Ile Ile Pro Val Leu Asn Lys Ile Asp
        130                 135                 140
Leu Pro Ala Ala Asp Pro Val Arg Ile Ala Gln Gln Ile Glu Asp Tyr
145                 150                 155                 160
Ile Gly Leu Asp Thr Thr Asn Ile Ile Ala Cys Ser Ala Lys Thr Gly
                165                 170                 175
Gln Gly Ile Pro Ala Ile Leu Lys Ala Ile Ile Asp Leu Val Pro Pro
                180                 185                 190
Pro Lys Ala Pro Ala Glu Thr Glu Leu Lys Ala Leu Val Phe Asp Ser
        195                 200                 205
```

                                    640

```
His Tyr Asp Pro Tyr Val Gly Ile Met Val Tyr Val Arg Ile Ile Ser
210                     215             220
Gly Glu Leu Lys Lys Gly Asp Arg Ile Thr Phe Met Ala Ala Lys Gly
225                 230             235                 240
Ser Ser Phe Glu Val Leu Gly Ile Gly Ala Phe Leu Pro Lys Ala Thr
                245             250                 255
Phe Ile Glu Gly Ser Leu Arg Pro Gly Gln Val Gly Phe Phe Ile Ala
            260             265             270
Asn Leu Lys Lys Val Lys Asp Val Lys Ile Gly Asp Thr Val Thr Lys
        275             280             285
Thr Lys His Pro Ala Lys Thr Pro Leu Glu Gly Phe Lys Glu Ile Asn
        290             295             300
Pro Val Val Phe Ala Gly Ile Tyr Pro Ile Asp Ser Ser Asp Phe Asp
305             310             315             320
Thr Leu Lys Asp Ala Leu Gly Arg Leu Gln Leu Asn Asp Ser Ala Leu
            325             330             335
Thr Ile Glu Gln Glu Ser Ser His Ser Leu Gly Phe Gly Phe Arg Cys
            340             345             350
Gly Phe Leu Gly Leu Leu His Leu Glu Ile Ile Phe Glu Arg Ile Ile
        355             360             365
Arg Glu Phe Asp Leu Asp Ile Ile Ala Thr Ala Pro Ser Val Ile Tyr
    370             375             380
Lys Val Val Leu Lys Asn Gly Lys Val Leu Asp Ile Asp Asn Pro Ser
385             390             395                 400
Gly Tyr Pro Asp Pro Ala Ile Ile Glu His Val Glu Glu Pro Trp Val
            405             410             415
His Val Asn Ile Ile Thr Pro Gln Glu Tyr Leu Ser Asn Ile Met Asn
            420             425             430
Leu Cys Leu Asp Lys Arg Gly Ile Cys Val Lys Thr Glu Met Leu Asp
        435             440             445
Gln His Arg Leu Val Leu Ala Tyr Glu Leu Pro Leu Asn Glu Ile Val
    450             455         .       460
Ser Asp Phe Asn Asp Lys Leu Lys Ser Val Thr Lys Gly Tyr Gly Ser
465             470             475                 480
Phe Asp Tyr Arg Leu Gly Asp Tyr Arg Lys Gly Ser Ile Ile Lys Leu
            485             490             495
Glu Val Leu Ile Asn Glu Glu Pro Ile Asp Ala Phe Ser Cys Leu Val
            500             505             510
His Arg Asp Lys Ala Glu Ser Arg Gly Arg Ser Ile Cys Glu Lys Leu
    515             520             525
Val Asp Val Ile Pro Gln Gln Leu Phe Lys Ile Pro Ile Gln Ala Ala
    530             535             540
Ile Asn Lys Lys Val Ile Ala Arg Glu Thr Ile Arg Ala Leu Ser Lys
545             550             555                 560
Asn Val Thr Ala Lys Cys Tyr Gly Gly Asp Ile Thr Arg Lys Arg Lys
            565             570             575
Leu Trp Glu Lys Gln Lys Lys Gly Lys Lys Arg Met Lys Glu Phe Gly
        580             585             590
Lys Val Ser Ile Pro Asn Thr Ala Phe Ile Glu Val Leu Lys Leu Asp
        595             600             605              .
```

        <210> 362
        <211> 481
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 362
```
Val Ala Leu Gln Thr Asn Ile Gly Leu Ile Gly Leu Ala Val Met Gly
1                 5             10              15
Lys Asn Leu Val Leu Asn Met Ile Asp His Gly Phe Ser Val Ser Val
        20              25              30
```

Tyr Asn Arg Thr Pro Glu Lys Thr Arg Asp Phe Leu Lys Glu Tyr Pro
        35   40   45
Asn His Arg Glu Leu Val Gly Phe Glu Ser Leu Glu Asp Phe Val Asn
        50   55   60
Ser Leu Glu Arg Pro Arg Lys Ile Met Leu Met Ile Gln Ala Gly Lys
65   70   75   80
Pro Val Asp Gln Ser Ile His Ala Leu Leu Pro Phe Leu Glu Pro Gly
                85   90   95
Asp Val Ile Ile Asp Gly Gly Asn Ser Tyr Phe Lys Asp Ser Glu Arg
            100   105   110
Arg Cys Lys Glu Leu Gln Glu Lys Gly Ile Leu Phe Leu Gly Val Gly
        115   120   125
Ile Ser Gly Gly Glu Glu Gly Ala Arg His Gly Pro Ser Ile Met Pro
    130   135   140
Gly Gly Asn Pro Glu Ala Trp Pro Leu Val Ala Pro Ile Phe Gln Ser
145   150   155   160
Ile Ala Ala Lys Val Gln Gly Arg Pro Cys Cys Ser Trp Val Gly Thr
                165   170   175
Gly Gly Ala Gly His Tyr Val Lys Ala Val His Asn Gly Ile Glu Tyr
            180   185   190
Gly Asp Ile Gln Leu Ile Cys Glu Ala Tyr Gly Ile Leu Arg Asp Phe
            195   200   205
Leu Lys Leu Ser Ala Thr Ala Val Ala Thr Ile Leu Lys Glu Trp Asn
    210   215   220
Thr Leu Glu Leu Glu Ser Tyr Leu Ile Arg Ile Ala Ser Glu Val Leu
225   230   235   240
Ala Leu Lys Asp Pro Glu Gly Ile Pro Val Ile Asp Thr Ile Leu Asp
                245   250   255
Val Val Gly Gln Lys Gly Thr Gly Lys Trp Thr Ala Ile Asp Ala Leu
            260   265   270
Asn Ser Gly Val Pro Leu Ser Leu Ile Ile Gly Ala Val Leu Ala Arg
    275   280   285
Phe Leu Ser Ser Trp Lys Glu Ile Arg Glu Gln Ala Ala Arg Asn Tyr
    290   295   300
Pro Gly Thr Pro Leu Ile Phe Glu Met Pro His Asp Pro Ser Val Phe
305   310   315   320
Ile Gln Asp Val Phe His Ala Leu Tyr Ala Ser Lys Ile Ile Ser Tyr
                325   330   335
Ala Gln Gly Phe Met Leu Leu Gly Glu Ala Ser Lys Glu Tyr Asn Trp
            340   345   350
Gly Leu Asp Leu Gly Glu Ile Ala Leu Met Trp Arg Gly Gly Cys Ile
            355   360   365
Ile Gln Ser Ala Phe Leu Asp Val Ile His Lys Gly Phe Ala Ala Asn
    370   375   380
Pro Glu Asn Thr Ser Leu Ile Phe Gln Glu Tyr Phe Arg Gly Ala Leu
385   390   395   400
Arg His Ala Glu Met Gly Trp Arg Arg Thr Val Val Thr Ala Ile Gly
            405   410   415
Ala Gly Leu Pro Ile Pro Cys Leu Ala Ala Ala Ile Thr Phe Tyr Asp
            420   425   430
Gly Tyr Arg Thr Ala Ser Ser Ser Met Ser Leu Ala Gln Gly Leu Arg
    435   440   445
Asp Tyr Phe Gly Ala His Thr Tyr Glu Arg Asn Asp Arg Pro Arg Gly
    450   455   460
Glu Phe Tyr His Thr Asp Trp Val His Thr Lys Thr Thr Glu Arg Val
465   470   475   480
Lys

<210> 363
<211> 423
<212> PRT
<213> Chlamydia pneumoniae

<400> 363

```
Ser Leu Ala Ile Leu Asn Tyr Val Arg Ser Leu Met Gln Ser Trp Leu
1               5                   10                  15
Gln Ser Leu Gln Glu Arg Asn Ile Leu Glu Asn Phe Thr Ala Gly Leu
            20                  25                  30
Glu Ser Val Glu Gly Pro Ile Ala Ala Tyr Leu Gly Phe Asp Pro Thr
        35                  40                  45
Ala Pro Ala Leu His Ile Gly His Trp Ile Gly Ile Cys Phe Leu Lys
    50                  55                  60
Arg Leu Ala Ala Leu Gly Ile Thr Pro Ile Ala Leu Val Gly Gly Ala
65                  70                  75                  80
Thr Gly Met Val Gly Asp Pro Ser Gly Lys Gln Ser Glu Arg Ser Leu
                85                  90                  95
Leu Gln Thr Ser Glu Val Phe Asp Asn Ser Gln Lys Ile Thr Ala Cys
            100                 105                 110
Leu Gln Arg Tyr Leu Pro Gly Val Thr Leu Val Asn Asn Ala Asp Trp
            115                 120                 125
Leu Gln Glu Ile Ser Leu Ile Asp Phe Leu Gly Asp Ile Gly Lys His
        130                 135                 140
Phe Arg Leu Gly Gln Met Leu Val Lys Asp Thr Ile Lys Gln Arg Val
145                 150                 155                 160
His Ser Asp Glu Gly Ile Ser Tyr Thr Glu Phe Ser Tyr Leu Ile Leu
                165                 170                 175
Gln Ser Tyr Asp Phe Tyr His Leu Phe Lys Asn Tyr Gly Thr Ile Leu
            180                 185                 190
Gln Cys Gly Gly Ser Asp Gln Trp Gly Asn Ile Thr Ser Gly Ile Asp
        195                 200                 205
Phe Ile Arg Arg Lys Gly Leu Gly Gln Ala Tyr Gly Leu Thr Tyr Pro
    210                 215                 220
Leu Leu Thr Asn Ala Gln Gly Lys Lys Ile Gly Lys Thr Glu Ser Gly
225                 230                 235                 240
Thr Val Trp Leu Asp Ser Asp Leu Thr Ser Pro Phe Glu Leu Tyr Gln
            245                 250                 255
Tyr Leu Leu Arg Leu Pro Asp Asp Thr Ile Pro Lys Ile Ala Arg Thr
            260                 265                 270
Leu Thr Leu Leu Ser Asn Glu Glu Ile Gln Asp Ile Asp Arg Arg Val
            275                 280                 285
Gln Thr Asp Pro Val Ala Val Lys Glu Phe Val Ala Gln Asp Ile Leu
    290                 295                 300
Ser Ala Ile His Gly Asp Leu Gly Leu Glu Glu Ala Leu Ser Val Thr
305                 310                 315                 320
Arg Ser Met His Pro Gly Asn Leu Ser Ser Leu Ser Glu Lys Asp Phe
            325                 330                 335
His Glu Leu Phe Ala Gly Gly Met Gly Ala Ser Leu Asp Lys Ser Glu
        340                 345                 350
Val Leu Gly Lys Arg Trp Leu Asp Leu Phe Leu Val Leu Gly Leu Cys
        355                 360                 365
Lys Ser Lys Gly Glu Ile Arg Arg Leu Ile Glu Gln Lys Gly Val Tyr
    370                 375                 380
Ile Asn Asn Val Pro Ile Ala Asn Glu His Ser Val Cys Glu Glu Gln
385                 390                 395                 400
Asp Ile Cys Tyr Gly His Tyr Val Leu Leu Ala Gln Gly Lys Lys Arg
            405                 410                 415
Lys Leu Val Leu Tyr Leu Asn
            420
```

<210> 364
<211> 263
<212> PRT
<213> Chlamydia pneumoniae

<400> 364

```
Leu Asp Lys Lys Lys Phe Val Lys Thr Gln Gln Thr Gln Asn Ile Ile
1               5                   10                  15
Glu Val Trp Asn Phe Tyr Trp Glu Thr Gln Glu Ile Glu Tyr Arg Asp
            20                  25                  30
Ser Leu Ile Glu Phe Tyr Leu Pro Leu Val Lys Ser Val Val His Arg
        35                  40                  45
Leu Ile Ser Gly Met Pro Ser His Val Lys Thr Glu Asp Leu Tyr Ala
    50                  55                  60
Ser Gly Val Glu Gly Leu Val Arg Ala Val Glu Arg Tyr Asn Pro Glu
65                  70                  75                  80
Arg Ser Arg Arg Phe Glu Gly Tyr Ala Val Phe Leu Ile Lys Ala Ala
            85                  90                  95
Ile Ile Asp Asp Leu Arg Lys Gln Asp Trp Val Pro Arg Ser Val His
        100                 105                 110
Gln Lys Ala Asn Lys Leu Ser Gly Ala Met Asp Ser Leu Arg Gln Ser
    115                 120                 125
Leu Gly Lys Glu Pro Thr Asp Leu Glu Leu Cys Glu Tyr Leu Asn Ile
    130                 135                 140
Ser Gln Gln Glu Leu Ser Gly Trp Phe Val Ser Ala Arg Pro Ala Leu
145                 150                 155                 160
Ile Val Ser Leu Asn Glu Glu Trp Pro Ser Gln Ser Asp Glu Gly Ala
            165                 170                 175
Gly Met Ala Leu Glu Glu Arg Ile Pro Asp Glu Arg Ala Glu Thr Gly
            180                 185                 190
Tyr Asp Val Val Asp Lys Gln Glu Phe Ser Leu Cys Leu Ala Asn Ala
        195                 200                 205
Ile Gln Glu Leu Glu Glu Lys Glu Arg Lys Val Met Ala Leu Tyr Tyr
    210                 215                 220
Tyr Glu Glu Leu Val Leu Lys Glu Ile Gly Lys Val Leu Gly Val Ser
225                 230                 235                 240
Glu Ser Arg Val Ser Gln Ile His Ser Lys Ala Leu Leu Lys Leu Arg
            245                 250                 255
Ala Ala Leu Ser Ala Phe Arg
            260
```

<210> 365
<211> 586
<212> PRT
<213> Chlamydia pneumoniae

<400> 365

```
Glu Ala Val Phe Val Ser Gly Lys Lys Asp Gly Val Arg Gly Met Ile
1               5                   10                  15
Phe Val Pro Leu Ser Ile Leu Val Leu Ile Phe Leu Pro Leu Pro Gln
            20                  25                  30
Ile Leu Leu Asp Phe Gly Leu Cys Ile Ser Phe Ala Leu Ser Leu Leu
        35                  40                  45
Thr Val Cys Trp Val Phe Thr Leu Asn Ser Ser Asn Ser Ala Lys Leu
    50                  55                  60
Phe Pro Pro Phe Phe Leu Tyr Leu Cys Leu Leu Arg Leu Gly Leu Asn
65                  70                  75                  80
Leu Ala Ser Thr Arg Trp Ile Val Ser Ser Gly Thr Ala Ser Ser Leu
            85                  90                  95
Ile Val Ser Leu Gly Ser Phe Phe Ser Leu Gly Ser Leu Trp Ala Ala
        100                 105                 110
```

```
Thr Phe Ala Cys Leu Leu Leu Phe Phe Val Asn Phe Leu Met Val Ser
        115                 120                 125
Lys Gly Ser Glu Arg Ile Ala Glu Val Arg Ser Arg Phe Phe Leu Glu
        130                 135                 140
Ala Leu Pro Ala Lys Gln Met Ala Leu Asp Ser Asp Leu Val Ser Gly
145                 150                 155                 160
Arg Ala Ser Tyr Lys Ala Val Lys Lys Gln Lys Asn Ala Leu Ile Glu
                165                 170                 175
Glu Gly Asp Phe Phe Ser Ala Met Glu Gly Val Phe Arg Phe Val Lys
            180                 185                 190
Gly Asp Ala Ile Ile Ser Cys Ile Leu Leu Leu Val Asn Val Val Ser
        195                 200                 205
Val Thr Cys Leu Tyr Tyr Thr Ser Gly Tyr Ala Leu Glu Gln Met Trp
    210                 215                 220
Phe Thr Val Leu Gly Asp Ala Leu Val Ser Gln Val Pro Ala Leu Leu
225                 230                 235                 240
Thr Ser Cys Ala Ala Ala Thr Leu Ile Ser Lys Ile Asp Lys Glu Glu
            245                 250                 255
Ser Leu Leu Asn Tyr Leu Phe Glu Tyr Tyr Lys Gln Leu Arg Gln His
        260                 265                 270
Phe Arg Val Val Ser Leu Leu Ile Phe Ser Leu Cys Cys Ile Pro Ser
        275                 280                 285
Ser Pro Lys Phe Pro Ile Val Leu Leu Ala Ser Leu Leu Trp Leu Ala
        290                 295                 300
Tyr Arg Lys Glu Glu Pro Ala Ser Glu Asp Ser Cys Ile Glu Arg Ala
305                 310                 315                 320
Phe Ser Tyr Val Glu Gly Ala Cys Pro Lys Glu Gln Glu Ser Gln Phe
            325                 330                 335
Tyr Gln Val Tyr Arg Ala Ala Ser Glu Glu Val Phe Glu Asp Leu Gly
        340                 345                 350
Val Arg Leu Pro Val Leu Thr Ser Leu Arg Ile Glu Glu Arg Pro Trp
        355                 360                 365
Leu Arg Val Phe Gly Gln Asn Val Tyr Leu Asp Glu Met Thr Pro Glu
    370                 375                 380
Ala Val Leu Pro Phe Leu Arg Asn Ile Ala His Glu Ala Leu Asn Ala
385                 390                 395                 400
Glu Val Val Gln Lys Tyr Leu Glu Glu Ser Glu Arg Val Phe Gly Ile
            405                 410                 415
Ala Val Glu Asp Ile Val Pro Lys Lys Ile Ser Leu Ser Ser Leu Val
            420                 425                 430
Val Leu Ser Arg Leu Leu Val Arg Glu Arg Val Ser Leu Lys Leu Phe
        435                 440                 445
Pro Lys Ile Leu Glu Ala Val Ala Val Tyr Gln Asn Ser Gly Asp Ser
    450                 455                 460
Leu Glu Ile Leu Ala Glu Lys Val Arg Lys Ser Leu Gly Tyr Trp Ile
465                 470                 475                 480
Gly Arg Ser Leu Trp Asp Gln Lys Gln Thr Leu Glu Val Ile Thr Ile
            485                 490                 495
Asp Phe His Val Glu Glu Leu Ile Asn Ser Ser Tyr Ser Lys Ser Asn
        500                 505                 510
Pro Val Met Gln Glu Asn Val Ile Arg Arg Val Asp Ser Leu Leu Glu
    515                 520                 525
Arg Ser Val Phe Lys Asp Phe Arg Ala Ile Val Thr Ser Cys Glu Thr
    530                 535                 540
Arg Phe Glu Met Lys Lys Met Leu Asp Pro His Phe Pro Asp Leu Leu
545                 550                 555                 560
Val Leu Ser His Asp Glu Leu Pro Lys Glu Ile Pro Ile Ser Phe Leu
            565                 570                 575
Gly Ile Val Ser Asp Glu Val Leu Val Pro
        580                 585
```

<210> 366
<211> 95
<212> PRT
<213> Chlamydia pneumoniae

<400> 366
Lys Glu Asn Ser Met Ala Lys Leu Val Ile Thr Ser Asp Asp Glu Gln
1   5   10   15
Gln Glu Phe Glu Leu Glu Asp Asn Ser Glu Ile Ala Glu Pro Cys Glu
            20   25   30
Ser Met Gly Ile Pro Phe Ala Cys Thr Glu Gly Val Cys Gly Thr Cys
            35   40   45
Val Ile Glu Val Leu Glu Gly Arg Glu Asn Leu Ser Glu Phe Thr Glu
        50   55   60
Pro Glu Tyr Asp Phe Leu Gly Glu Pro Glu Asp Ser Asn Glu Arg Leu
65   70   75   80
Ala Cys Gln Cys Arg Ile Lys Gly Gly Cys Val Lys Val Thr Phe
                85   90   95

<210> 367
<211> 349
<212> PRT
<213> Chlamydia pneumoniae

<400> 367
Phe Lys Gly Thr Gln Val Asn Ser Leu Ile Met Ala Thr Ile Ser Pro
1   5   10   15
Ile Ser Leu Thr Val Asp His Pro Leu Val Asp Thr Lys Lys Lys Ser
            20   25   30
Cys Ser Asn Phe Asp Lys Ile Gln Ser Arg Ile Leu Leu Ile Thr Ala
            35   40   45
Ile Phe Ala Val Leu Val Thr Ile Gly Thr Leu Leu Ile Gly Leu Leu
        50   55   60
Leu Asn Ile Pro Val Ile Tyr Phe Leu Thr Gly Ile Ser Phe Ile Ala
65   70   75   80
Val Val Leu Ser Asn Phe Ile Leu Tyr Lys Arg Ala Thr Thr Leu Leu
                85   90   95
Lys Pro Arg Ala Cys Gly Lys His Lys Glu Ile Lys Pro Lys Arg Val
            100   105   110
Ser Thr Asn Leu Gln Tyr Ser Ser Ile Ser Ile Ala Ile Asn Arg Ser
            115   120   125
Lys Glu Asn Trp Glu His Gln Pro Lys Asp Leu Gln Asn Leu Pro Ala
            130   135   140
Pro Ser Ala Leu Leu Thr Asp Asn Pro Tyr Glu Ile Trp Lys Ala Lys
145   150   155   160
His Ser Leu Phe Ser Leu Val Ser Leu Leu Pro Gly Gly Asn Pro Glu
                165   170   175
His Leu Leu Ile Ser Ala Ser Glu Asn Leu Gly Lys Thr Leu Leu Ile
            180   185   190
Glu Glu Thr Ser Gln Asn Ala Pro Ile Ser Ser Tyr Val Asp Thr Thr
            195   200   205
Pro Ser Pro Lys Ser Leu Leu Asn Glu Ala Ile Gln Glu Thr Arg Val
210   215   220
Glu Ile Asn Thr Glu Leu Pro Ala Gly Asp Ser Gly Glu Arg Leu Tyr
225   230   235   240
Trp Gln Pro Asp Phe Arg Gly Arg Val Phe Leu Pro Gln Ile Pro Thr
                245   250   255
Thr Pro Glu Ala Ile Tyr Gln Tyr Tyr Tyr Ala Leu Tyr Val Thr Tyr
            260   265   270
Ile Gln Thr Ala Ile Asn Thr Asn Thr Gln Ile Ile Gln Ile Pro Leu
            275   280   285

646

Tyr Ser Leu Arg Glu His Leu Tyr Ser Arg Glu Leu Pro Pro Gln Ser
    290   295   300
Arg Met Gln Gln Ser Leu Ala Met Ile Thr Ala Val Lys Tyr Met Ala
305   310   315   320
Glu Leu His Pro Glu Tyr Pro Leu Thr Ile Ala Cys Val Glu Arg Ser
            325   330   335
Leu Ala Gln Leu Pro Gln Glu Ser Ile Glu Asp Leu Ser
            340   345

        <210> 368
        <211> 155
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 368
Met Gly Tyr Leu Pro Val Ser Ala Thr Asp Val Leu Phe Glu Ser Pro
1   5   10   15
Ala Ala Pro Leu Ile Asn Ser Ala Asn Thr Gln Asn Gln Lys Leu Ile
            20   25   30
Glu Leu Lys Gly Lys Gln Gln Ala Glu Ser Ser Pro Arg Thr Ile Thr
        35   40   45
Ser Val Ile Leu Glu Val Leu Leu Val Ile Gly Cys Cys Leu Ile Val
    50   55   60
Leu Ser Leu Leu Ala Ile Arg Pro Ala Leu Gln Phe Thr Leu Glu Thr
65   70   75   80
Gly His Pro Ala Ala Ile Ala Val Leu Ala Val Ser Gly Thr Ile Leu
            85   90   95
Leu Val Ala Val Ile Ile Leu Phe Cys Phe Leu Ala Ala Val Pro Phe
            100   105   110
Ala Ala Lys Lys Thr Tyr Lys Tyr Val Lys Thr Val Asp Asp Tyr Ala
        115   120   125
Ser Trp His Ser His Gln Gln Thr Pro Thr Leu Gly Thr Ile Phe Ser
    130   135   140
Gly Ile Val Tyr Ala Glu Ser Gln Ala Gln Leu
145   150   155

        <210> 369
        <211> 253
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 369
Ser Phe Pro Leu Asn Arg Tyr Phe Met Thr Lys Thr Thr Ser Ile Pro
1   5   10   15
Asp Val His Glu Asn Gln Ser His Leu Ser Val Asp Glu Arg Leu Ile
            20   25   30
Ser Glu Ser Pro Val Leu Thr Lys Lys Glu Val Ile Ala Lys Ile Ile
        35   40   45
Lys Leu Thr Ala Leu Ile Leu Ala Leu Ala Ile Ala Val Gly Thr Ala
    50   55   60
Val Val Ala Gly Val Leu Gly Met Pro Leu Met Ala Ile Ala Thr Gly
65   70   75   80
Ala Ala Leu Leu Ala Ala Val Val Leu Ser Cys Leu Leu Leu Arg Arg
            85   90   95
Arg Glu Pro Ser Lys Pro Thr Glu Glu Leu Leu Gly Pro Gln Lys His
            100   105   110
Val Pro Lys Asp Ile Ala Ala Gln Val Gln Pro Ser Val Pro Leu Asp
        115   120   125
Tyr Gln Lys Leu Leu Arg Asn Glu Trp Thr Leu Val Asn Thr Leu Ser
    130   135   140

```
Glu Ile Asn Ile Ser Trp Thr Leu Gln Asp Pro Asn Gln Arg Tyr Tyr
145                 150                 155                 160
Val Trp Glu His Gln Gly Ala Pro Ile Thr Leu Val Ala Thr Thr Gly
                165                 170                 175
Asp Ile Ala Lys Pro Arg Leu Lys Thr Ser Gly Arg Val Met Ile Val
                180                 185                 190
Asn Ala Ala Asn Ser Asn Met Gln Ser Gly Gly Ala Gly Thr Asn Ala
            195                 200                 205
Ala Leu Ser Ala Ala Thr His Pro Thr Cys Trp Asn Asn Thr Arg Thr
        210                 215                 220
Ser Gly Gly Lys Ile Asn Thr Gly Lys Gly Leu Ser Val Gly Glu Cys
225                 230                 235                 240
Arg Ser Ala Pro Trp Ile Asn Arg Asp Trp Thr Asn Lys
                245                 250
```

```
        <210> 370
        <211> 114
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 370
Thr Leu Ala Lys Asp Tyr Leu Trp Val Asn Ala Ala Gln His Pro Gly
1                   5                   10                  15
Ser Ile Glu Thr Gly Arg Ile Asn Asp Thr Asn Pro Gly Glu Ala His
                20                  25                  30
Phe Leu Ala Gln Leu Leu Gly Pro Lys Tyr Glu Gly Glu Leu Lys Ala
        35                  40                  45
His Pro Glu Lys Leu Ser Asn Val Ile Lys Lys Ala Tyr Leu Asn Cys
    50                  55                  60
Phe Asp Glu Ala Leu Asn Asn Gln Ala Thr Val Val Gln Val Pro Leu
65                  70                  75                  80
Ile Ser Ser Ser Ile Tyr Ser Pro Gly Gly Lys Leu Glu Leu Glu Pro
                85                  90                  95
Val Asn Gln Thr Lys Pro Asn Ser Ser Ala Tyr Lys Leu Tyr His Ile
                100                 105                 110
Arg Thr
```

```
        <210> 371
        <211> 406
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 371
Asn Ile Met Thr Asp Ser Asn Pro Leu Pro Ser Tyr Thr Asp Ala Ser
1                   5                   10                  15
Leu Tyr Arg Thr Pro Ala Lys His Ser Tyr Pro Ile Arg Leu Pro Leu
                20                  25                  30
Asn Arg Thr Asp Arg Ile Glu Lys Ile Leu Lys Ile Val Thr Leu Thr
            35                  40                  45
Leu Ala Leu Ala Cys Ala Leu Gly Phe Ser Ile Ala Ala Gly Ile Leu
        50                  55                  60
Ala Met Pro Ile Phe Ser Ala Val Val Val Ile Thr Leu Ala Ile Ala
65                  70                  75                  80
Ala Val Ser Leu Tyr Ser Leu Leu Lys Lys Pro Lys Leu Tyr Glu Ile
                85                  90                  95
Leu Pro Gln Ile Glu Pro Glu Ser Glu Gln Ser Ser Leu Ser Pro Ser
                100                 105                 110
Pro Gln Pro Pro Glu Gln Gln Asp Leu Pro Leu Gln Ile Asp Pro Leu
            115                 120                 125
```

```
Pro Asp Pro Glu Ser Leu Pro Glu Val Ser Leu Ala Asp Leu Thr Thr
    130                 135                 140
Pro Pro Glu Glu Leu Thr Ala Ile Thr Val Thr Pro Gly Tyr Glu Ala
145                 150                 155                 160
Leu Leu Glu Gln Asn Trp Asp Leu Leu Pro Ser Leu Ala Ala Val Asp
                165                 170                 175
Pro Ser Phe Thr Thr Glu Thr Pro Gln Gln Pro Cys Phe Ile Trp Lys
            180                 185             190
Leu Lys Asp Ser Lys Leu Ile Phe Ile Ser Thr Ser Gly Asp Ile Ala
        195                 200                 205
Val Pro Arg Ile Lys Thr Gln Gly Arg Val Met Ile Val Asn Ala Ala
    210                 215                 220
Asn Glu Asn Ile Ser Arg Glu Gly Gly Gly Thr Asn Lys Ala Leu Ser
225                 230                 235                 240
Leu Ala Thr Ser Leu Gln Cys Trp Asn Ala Ser Arg Leu Pro Arg Ala
                245                 250                 255
His Ser Arg Ser Gly Ser Gln Leu Gln Pro Gly Glu Cys Arg Ser Ala
            260                 265                 270
Lys Trp Glu Asn Ser Asp His Thr Ser Asn Asp His Val Pro Gly Lys
        275                 280                 285
Ala His Phe Leu Ala Gln Leu Leu Gly Pro Glu Ala Ala Lys Cys Asn
    290                 295                 300
Asn Asp Pro Lys Gln Ala Phe Glu Val Ser Lys Lys Ala Phe His Asn
305                 310                 315                 320
Leu Phe Gln Glu Ala Glu Ile Ile Gly Val Asp Val Ile Gln Leu Pro
                325                 330                 335
Leu Ile Gly Cys Asn Leu Phe Ala Pro Ser Arg Leu Leu Asn Leu Gly
            340                 345                 350
Lys Thr Arg Ala Glu Trp Ile Glu Ala Ile Lys Leu Ala Leu Ile Thr
        355                 360                 365
Ser Leu Gln Asp Phe Gly Trp Glu Gln Asp Asn Gln Glu Glu Gln Lys
    370                 375                 380
Ile Ile Ile Leu Thr Asp Lys Asp Gln Pro Pro Ile Ile Pro Pro Arg
385                 390                 395                 400
Phe Asp Leu Thr Thr Pro
                405


        <210> 372
        <211> 386
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 372
Lys Arg Ile Phe Phe Lys Leu Phe Val Phe Tyr Leu Lys Ser Phe Met
1               5                   10                  15
Ser Thr Thr Glu Pro Asn Leu Thr Asn Val Asn Leu Thr Met Leu Ile
            20                  25                  30
Ser Ser Glu Ser Met Pro Thr Gln Leu Ala Ser His Lys Leu Lys Gly
        35                  40                  45
Leu Asp Leu Val Ala Phe Ile Leu Ile Ile Gly Ile Ala Val Ser Ser
    50                  55                  60
Gly Thr Ala Ala Ile Ile Leu Gly Ile Pro Leu Leu Phe Ile Leu Thr
65                  70                  75                  80
Ala Leu Ala Val Leu Ala Phe Ser Ile Leu Leu Tyr Phe Leu Leu Arg
                85                  90                  95
Glu Pro Lys Ser Pro Ile Ser Val Thr His Gln Pro Thr Pro Ile Ile
            100                 105                 110
Lys Asp Thr Asp Leu Pro Pro Val Pro Pro Leu Ala Leu Thr Pro Val
        115                 120                 125
Pro Thr Glu Ala Val Leu Glu Glu Pro Pro Leu Pro Ser Pro Arg Thr
    130                 135                 140
```

649

```
His Gln Thr Leu Leu Gln Glu Asn Trp Asp Arg Ile Pro Asp Leu Gln
145             150             155             160
Ala Asn Thr Asp Met Pro Phe Ile Ala Ala Asp Asn Gln Thr Gly Tyr
            165             170             175
Ala Trp His Leu Lys Asn Ser Asn Leu Thr Leu Ile Ser Thr Leu Gly
        180             185             190
Pro Ile Glu Lys Pro Arg Tyr Lys Thr Gln Gly Ile Val Met Ile Val
        195             200             205
Asn Ala Ala Thr Pro Asn Met Ala Asn Asn Val Lys Gly Thr Ser Leu
    210             215             220
Ala Leu Ala Lys Ala Thr Ser Val Arg Cys Trp Glu Asn Ser Lys Lys
225             230         .       235             240
Ser Pro Asp Pro Leu Arg Ser Lys Gln Pro Leu Gln Leu Gly Glu Cys
            245             250             255
Arg Ser Ala Lys Trp Glu Asn Leu Asn Gly Thr Thr Asn Ala Gly Lys
        260             265             270
Ala Gly Leu Pro Gln Phe Leu Gly Gln Leu Leu Gly Pro Lys Ala Ser
        275             280             285
Asp Tyr Asn Tyr Asn Pro Asn Asp Ala Phe Thr Phe Cys Arg Gln Ala
    290             295             300
Tyr Leu Asn Cys Leu Asn Glu Ala Lys Arg Arg Lys Thr Thr Val Val
305             310             315             320
Gln Leu Pro Leu Leu Ser Ser His Phe Pro Gly Ser Pro Lys Asp Glu
            325             330             335
Glu Thr Thr Ser Leu Arg Leu Gln Trp Ile Asp Gly Val Lys Leu Ala
            340             345             350
Leu Ile Asp Ala Leu Gln Thr Phe Gly Ser Glu Ala Glu Asn Gln Asn
    355             360             365
Gln Pro Trp Val Ile Ile Leu Thr Thr Leu Ala Arg His Pro Leu Ile
    370             375             380
Thr Pro
385

        <210> 373
        <211> 121
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 373
Lys Thr Met Pro Val Ser Ser Ala Pro Leu Pro Thr Ser His Arg Pro
1               5               10              15
Ser Ser Gly Asn Leu Gly Leu Met Glu Pro Asn Ser Lys Ala Leu Lys
            20              25              30
Ala Lys His Gln Asp Lys Thr Thr Lys Thr Ile Lys Leu Leu Val Lys
        35              40              45
Ile Leu Val Ala Ile Leu Val Ile Glu Val Leu Gly Ile Ile Ala Ala
    50              55              60
Phe Phe Ile Pro Gly Thr Pro Pro Ile Cys Leu Ile Ile Leu Gly Gly
65              70              75              80
Leu Ile Leu Thr Thr Val Leu Cys Val Leu Leu Leu Val Ile Lys Leu
            85              90              95
Ala Leu Val Asn Lys Thr Glu Gly Thr Thr Ala Glu Gln Gln Ile Lys
        100             105             110
Arg Lys Leu Ser Ser Lys Ser Ile Ser
        115             120

        <210> 374
        <211> 117
        <212> PRT
        <213> Chlamydia pneumoniae
```

650

```
        <400> 374
Asn Tyr Arg Ala Cys His Arg Asn Ile Gly Asn His Met Ser Ser Pro
1               5                   10                  15
Val Val Thr Gly Thr Ser Ser Ala Ser Pro Val Glu Gln Thr Lys Leu
            20                  25                  30
Gly Glu Phe Leu Glu Arg Leu Ser Gly Ser Gly Arg Cys Ile Lys Ile
            35                  40                  45
Ala Phe Ala Ala Ser Thr Ala Leu Leu Leu Leu Asn Thr Phe Val Ser
        50                  55                  60
Gly Ile Val Ala Ile Ala Met Ile Phe Val Ala Thr Ser Val Gly Ala
65                  70                  75                  80
Tyr Phe Thr Val Ile Gly Pro Leu Phe Leu Leu Ser Leu Ile Leu Leu
                85                  90                  95
Ala Ile Met Leu Ile Ser Met Tyr Lys Ile Thr His Pro Ser Gln Asn
            100                 105                 110
Thr Pro Ile Ser Asn
            115


        <210> 375
        <211> 621
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 375
Asn Ser Glu Ile Phe Glu Ile Phe Met Thr Leu Ile Thr Pro Ala Ile
1               5                   10                  15
Asn Ser Ser Arg Arg Lys Thr His Thr Val Arg Ile Gly Asn Leu Tyr
            20                  25                  30
Ile Gly Ser Asp His Ser Ile Lys Thr Gln Ser Met Thr Thr Thr Leu
            35                  40                  45
Thr Thr Asp Ile Asp Ser Thr Val Glu Gln Ile Tyr Ala Leu Ala Glu
        50                  55                  60
His Asn Cys Asp Ile Val Arg Val Thr Val Gln Gly Ile Lys Glu Ala
65                  70                  75                  80
Gln Ala Cys Glu Lys Ile Lys Glu Arg Leu Ile Ala Leu Gly Leu Asn
                85                  90                  95
Ile Pro Leu Val Ala Asp Ile His Phe Phe Pro Gln Ala Ala Met Leu
            100                 105                 110
Val Ala Asp Phe Ala Asp Lys Val Arg Ile Asn Pro Gly Asn Tyr Ile
            115                 120                 125
Asp Lys Arg Asn Met Phe Lys Gly Thr Lys Ile Tyr Thr Glu Ala Ser
            130                 135                 140
Tyr Ala Gln Ser Leu Leu Arg Leu Glu Glu Lys Phe Ala Pro Leu Val
145                 150                 155                 160
Glu Lys Cys Lys Arg Leu Gly Lys Ala Met Arg Ile Gly Val Asn His
                165                 170                 175
Gly Ser Leu Ser Glu Arg Ile Met Gln Lys Tyr Gly Asp Thr Ile Glu
                180                 185                 190
Gly Met Val Ala Ser Ala Ile Glu Tyr Ile Ala Val Cys Glu Lys Leu
                195                 200                 205
Asn Tyr Arg Asp Val Val Phe Ser Met Lys Ser Ser Asn Pro Lys Ile
            210                 215                 220
Met Val Thr Ala Tyr Arg Gln Leu Ala Lys Asp Leu Asp Ala Arg Gly
225                 230                 235                 240
Trp Leu Tyr Pro Leu His Leu Gly Val Thr Glu Ala Gly Met Gly Val
                245                 250                 255
Asp Gly Ile Ile Lys Ser Ala Val Gly Ile Gly Thr Leu Leu Ala Glu
                260                 265                 270
Gly Leu Gly Asp Thr Ile Arg Cys Ser Leu Thr Gly Cys Pro Thr Thr
            275                 280                 285
```

Glu Ile Pro Val Cys Asp Ser Leu Leu Arg His Thr Lys Ile Tyr Leu
290   295   300
Asp Leu Pro Glu Lys Lys Asn Pro Phe Ser Leu Gln His Ser Glu Asn
305   310   315   320
Phe Val Ser Ala Ala Glu Lys Pro Ala Lys Thr Thr Leu Trp Gly Asp
                325   330   335
Val Tyr Gly Val Phe Leu Lys Leu Tyr Pro His His Leu Thr Asp Phe
                340   345   350
Thr Pro Glu Glu Leu Leu Glu His Leu Gly Val Asn Pro Val Thr Lys
            355   360   365
Glu Lys Ala Phe Thr Thr Pro Glu Gly Val Val Val Pro Pro Glu Leu
    370   375   380
Lys Asp Ala Pro Ile Thr Asp Val Leu Arg Glu His Phe Leu Val Phe
385   390   395   400
His His His Gln Val Pro Cys Leu Tyr Glu His Asn Glu Glu Ile Trp
                405   410   415
Asp Ser Pro Ala Val His Gln Ala Pro Phe Val His Phe His Ala Ser
                420   425   430
Asp Pro Phe Ile His Thr Ser Arg Asp Phe Phe Glu Lys Gln Gly His
            435   440   445
Gln Gly Lys Pro Thr Lys Leu Val Phe Ser Arg Asp Phe Asp Asn Lys
    450   455   460
Glu Glu Ala Ala Ile Ser Ile Ala Thr Glu Phe Gly Ala Leu Leu Leu
465   470   475   480
Asp Gly Leu Gly Glu Ala Val Val Leu Asp Leu Pro Asn Leu Pro Leu
                485   490   495
Gln Asp Val Leu Lys Ile Ala Phe Gly Thr Leu Gln Asn Ala Gly Val
            500   505   510
Arg Leu Val Lys Thr Glu Tyr Ile Ser Cys Pro Met Cys Gly Arg Thr
    515   520   525
Leu Phe Asp Leu Glu Glu Val Thr Thr Arg Ile Arg Lys Arg Thr Gln
    530   535   540
His Leu Pro Gly Leu Lys Ile Ala Ile Met Gly Cys Ile Val Asn Gly
545   550   555   560
Pro Gly Glu Met Ala Asp Ala Asp Phe Gly Phe Val Gly Ser Lys Thr
                565   570   575
Gly Met Ile Asp Leu Tyr Val Lys His Thr Cys Val Lys Ala His Ile
            580   585   590
Pro Met Glu Asp Ala Glu Glu Glu Leu Ile Arg Leu Leu Gln Glu His
    595   600   605
Gly Val Trp Lys Asp Pro Glu Glu Thr Lys Leu Thr Val
610   615   620

        <210> 376
        <211> 251
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 376
Val Asp Ser Met Thr Leu Ser Phe His Thr His Pro Leu Asn Tyr Trp
1   5   10   15
Thr Phe Glu Glu Phe Asp Gly Leu Pro Ile Arg His Gly Val Phe Ser
            20   25   30
Lys Gln Lys Asp Ala Glu Gly Thr Val Phe Ala Ala Lys Asn Pro Glu
        35   40   45
Ile Ala Ser Ala Leu Gln Ser Pro Lys Tyr Cys Asp Leu His Gln Arg
    50   55   60
His Gly Thr Ser Val Arg Cys Val Thr Pro Thr Ser Pro Thr Tyr Gln
65   70   75   80
Pro Ala Asp Gly Leu Cys Thr Gln Ser Pro Leu Leu Ser Leu His Ile
                85   90   95

652

```
Arg His Ser Asp Cys Gln Ala Ala Ile Phe Tyr Asp Arg Glu His His
            100             105             110
Ala Ile Ala Asn Val His Ser Gly Trp Arg Gly Leu Leu Gly Asn Ile
            115             120             125
Tyr Ala Val Thr Val Gly Thr Met Lys Lys Leu Phe His Thr Lys Pro
        130             135             140
Gln Asp Leu Phe Val Ala Ile Gly Pro Ser Ile Gly Pro Asp Tyr Ala
145             150             155             160
Ile Tyr Pro Asp Tyr Ala Thr Leu Phe Pro Arg Ser Phe Leu Pro Phe
                165             170             175
Met Asn Pro Lys Asn His Phe Asp Leu Arg Ala Ile Ala Arg Lys Gln
            180             185             190
Leu Thr Asn Leu Gly Ile Ser Lys Asp Arg Ile Phe Ile Ser Asp Leu
            195             200             205
Cys Thr Tyr Thr Glu His Asp Ala Phe Phe Ser Ser Arg Tyr Leu Ala
    210             215             220
His His Pro Asp Pro Asn Leu Thr Gly Gln His Ser Lys Asn Arg Asn
225             230             235             240
Asn Val Thr Ala Val Leu Leu Leu Pro Arg Asp
            245             250
```

```
        <210> 377
        <211> 168
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 377
Arg Leu Ser Met Lys Leu Gly Ala Ser Thr Asn His Lys Val His Glu
1               5               10              15
Pro Val Lys Pro Lys Lys Ala Gln Leu Ala Glu Ile Glu Ala Asn Lys
            20              25              30
Thr Gln Ala Thr Glu Gly Thr Leu Arg Ser Lys Ser Leu Ala Leu Gln
        35              40              45
Ile Ala Arg Ala Val Leu Tyr Ile Leu Phe Ala Ala Leu Met Leu Ala
    50              55              60
Ala Gly Ile Thr Phe Val Thr Phe Leu Ala Leu Gly Phe Pro Leu Ile
65              70              75              80
Gln Ala Tyr Ser Ile Ala Gly Ile Ile Thr Leu Val Gly Leu Ala Ile
                85              90              95
Gly Leu Val Leu Leu Ile Leu Ser Leu Leu Pro Lys Glu Asp Glu Glu
            100             105             110
Ala Asp Ala Leu Ser Arg Asn Ala Leu Leu Pro Leu Thr Ile Ile Val
            115             120             125
Ile Glu Gln Gln Pro Ile Thr Pro Lys Pro Glu Ile Pro Tyr Ser Tyr
    130             135             140
Leu Thr Lys Leu Ala Leu Leu Thr Ser Leu Phe Leu Thr Leu Arg Arg
145             150             155             160
Ser Ser Ser Gln Arg Lys Thr His
                165
```

```
        <210> 378
        .<211> 205
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 378
Phe Lys Val Val Thr Ala Lys Ala Pro Asn Leu Thr Glu Ile Arg Asp
1               5               10              15
His Gly Ala Arg Val Pro Ser Leu Phe Leu Leu Ser Pro Glu Thr Ser
            20              25              30
```

His Trp Lys Gly Asp Lys Glu Val Ser Ala Pro Leu Lys Gln Leu Gln
    35   40   45
Asp Leu Leu Gly Glu Glu Gln Trp Glu Ala Met Lys Thr Lys Met Asn
    50   55   60
Ser Arg Lys Lys Ala Gly Gln Trp Ala Ile Phe Asn Ser Pro Thr Pro
65   70   75   80
Gly Val Ser Ser Thr Leu Val Leu Ala Trp Thr Pro Trp Gly Tyr Tyr
            85   90   95
Asp Lys Asp Val Gln Asp Ile Leu Glu Arg Lys Asp Pro Met Ser Ser
            100   105   110
Ser Leu Ser Glu Lys Asp Ser Lys Glu Phe Leu Lys Asn Leu Phe Val
            115   120   125
Asp Leu Leu Glu Asn Gly Phe Thr Ser Val His Ile His Ala Glu Glu
    130   135   140
Ala Phe Thr Pro Leu Asp His Thr Gly Lys Pro His Phe Lys Arg Asp
145   150   155   160
Asn Val Tyr Leu Pro Gly Lys Leu Leu Gly Ala Leu Asn Glu Ala Ala
            165   170   175
Val Gln Ala Asn Val Ser Ala Asp Thr Gln Phe Thr Leu Phe Leu Thr
            180   185   190
Gln Asp Glu Cys Asn Pro Phe His Asp Lys Lys Arg Gly
            195   200   205

<210> 379
<211> 365
<212> PRT
<213> Chlamydia pneumoniae

<400> 379
Ile Met Thr Thr Glu Val Arg Ile Pro Asn Ile Ala Glu Ser Ile Ser
1   5   10   15
Glu Val Thr Val Ala Ser Leu Leu Val Thr Glu Gly Ala Leu Ile Gln
            20   25   30
Glu Asn Gln Gly Leu Leu Glu Ile Glu Ser Asp Lys Val Asn Gln Leu
            35   40   45
Ile Tyr Ala Pro Val Ser Gly Arg Ile Phe Trp Glu Val Ser Glu Gly
    50   55   60
Asp Val Val Pro Val Gly Gly Val Val Gly Lys Ile Glu Pro Ala Gly
65   70   75   80
Glu Gly Glu Glu Leu Gly Asp Ser Gln Ser Lys Glu Thr Ile Glu Ala
            85   90   95
Glu Ile Ile Cys Phe Pro Gln Ser Gly Val Arg Gln Ser Pro Pro Glu
            100   105   110
Asn Lys Thr Phe Ile Pro Leu Arg Asp Gln Met Asp Gln Gly Ser Gln
            115   120   125
Gly Leu Ser Ala Gly Asp Arg Gly Glu Thr Arg Glu Arg Met Thr Ser
            130   135   140
Ile Arg Lys Thr Ile Ser Arg Arg Leu Leu Ser Ala Leu His Glu Ser
145   150   155   160
Ala Met Leu Thr Thr Phe Asn Glu Val Tyr Met Thr Pro Leu Phe His
            165   170   175
Leu Arg Lys Glu Lys Gln Glu Glu Phe Leu Ser Arg Tyr Gly Val Lys
            180   185   190
Leu Gly Phe Met Ser Phe Phe Val Lys Ala Val Leu Glu Ala Leu Lys
            195   200   205
Ala Tyr Pro Arg Val Asn Ala Tyr Ile Asp Gly Glu Glu Ile Val Tyr
    210   215   220
Arg His Tyr Tyr Asp Ile Ser Ile Ala Val Gly Ile Asp Arg Gly Leu
225   230   235   240
Val Val Pro Val Ile Arg Asp Cys Asp Lys Leu Ser Asn Gly Glu Ile
            245   250   255

Glu Gln Lys Leu Ala Asp Leu Ala Leu Arg Ala Arg Glu Gly Leu Leu
            260   265   270
Ala Ile Ala Glu Leu Glu Gly Gly Gly Phe Thr Ile Thr Asn Gly Gly
            275   280   285
Val Tyr Gly Ser Leu Leu Ser Thr Pro Ile Ile Asn Pro Pro Gln Val
            290   295   300
Gly Ile Leu Gly Met His Lys Ile Glu Lys Arg Pro Val Val Leu Asp
305   310   315   320
Asn Glu Ile Val Ile Ala Asp Met Met Tyr Val Ala Leu Ser Tyr Asp
                    325   330   335
His Arg Leu Ile Asp Gly Lys Glu Ala Val Gly Phe Leu Val Lys Val
                    340   345   350
Lys Glu Gly Leu Glu Asn Pro Ala Ser Leu Leu Asp Leu
            355   360   365

        <210> 380
        <211> 917
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 380
Ile Val Phe Ile Glu Phe Asn Tyr Phe Met Asp Ser Glu Phe Val Gly
1   5   10   15
Gln Val Tyr Ser Ser Asp Met Asp Trp Ile Glu Ser Met Tyr Gln Arg
            20   25   30
Phe Met Asn His Glu Thr Leu Asp Pro Ser Trp Lys Tyr Phe Phe Glu
            35   40   45
Gly Tyr Gln Leu Gly Gln Ala Ala Ser Pro Ser Glu Ala Ser Thr Lys
    50   55   60
Ile Ser Gly Asn Glu Thr Ile Ala Met Leu Gln Glu Gln Lys Ser Gln
65   70   75   80
Phe Leu Cys Thr Ile Tyr Arg Tyr Tyr Gly Tyr Leu Gln Ser Gln Ile
                85   90   95
Ser Thr Leu Ala Pro Thr Thr Asp Ser Arg Phe Ile Gln Glu Lys Ile
            100   105   110
Ala Lys Ile Asp Leu Asp Glu Gln Val Pro Ser Ala Gly Leu Leu Pro
            115   120   125
Lys Ala Gln Val Ser Val Arg Glu Leu Ile Glu Ala Leu Lys Lys Cys
            130   135   140
Tyr Cys Gly Ser Leu Thr Leu Glu Thr Leu Thr Cys Thr Pro Glu Leu
145   150   155   160
Gln Glu Phe Val Trp Asn Leu Met Glu Lys Arg Gln Val Glu Arg Phe
                165   170   175
Ala Glu Gln Leu Leu Arg Ser Tyr Lys Asp Leu Cys Lys Ala Thr Phe
            180   185   190
Phe Glu Glu Phe Leu Gln Ile Lys Phe Thr Gly Gln Lys Arg Phe Ser
            195   200   205
Leu Glu Gly Gly Glu Thr Leu Val Pro Met Leu Glu His Leu Val His
            210   215   220
Tyr Gly Ser Ala Leu Gly Ile Ser Asn Tyr Val Leu Gly Met Ala His
225   230   235   240
Arg Gly Arg Leu Asn Val Leu Thr Asn Val Leu Gly Lys Pro Tyr Arg
            245   250   255
Tyr Val Phe Met Glu Phe Glu Asp Asp Pro Ala Ala Arg Gly Leu Glu
            260   265   270
Ser Val Gly Asp Val Lys Tyr His Lys Gly Tyr Val Leu Lys Ser His
            275   280   285
Gln Lys Asp Arg Glu Thr Thr Phe Val Met Leu Pro Asn Ala Ser His
            290   295   300
Leu Glu Ser Val Asp Pro Ile Val Glu Gly Val Val Ala Ala Leu Gln
305   310   315   320

655

```
His Gln Gly His Ala Gly Lys Glu Gln Ser Ser Leu Ala Ile Leu Val
            325                     330                 335
His Gly Asp Ala Ala Phe Ser Gly Gln Gly Val Val Tyr Glu Thr Leu
            340                 345                 350
Gln Leu Ser Arg Val Pro Gly Tyr Ser Thr Glu Gly Thr Leu His Ile
            355                 360                 365
Val Val Asn Asn Tyr Ile Gly Phe Thr Ala Val Pro Arg Glu Ser Arg
    370                 375                 380
Ser Thr Pro Tyr Cys Thr Asp Ile Ala Lys Met Leu Gly Ile Pro Val
385                 390                 395                 400
Phe Arg Val Asn Ser Glu Asp Val Val Ala Cys Ile Glu Ala Ile Glu
                405                 410                 415
Tyr Ala Leu Gln Val Arg Glu Arg Phe Ser Cys Asp Val Ile Ile Asp
            420                 425                 430
Leu Cys Cys Tyr Arg Lys Tyr Gly His Asn Glu Ser Asp Asp Pro Ser
        435                 440                 445
Val Thr Ala Pro Leu Leu Tyr Asp Gln Ile Lys Arg Lys Lys Ser Ile
    450                 455                 460
Arg Glu Leu Phe Arg Gln Tyr Leu Leu Glu Gly Gln Phe Ala Asp Ile
465                 470                 475                 480
Ser Glu Glu Thr Leu Ala Ser Ile Glu Lys Glu Ile Gln Glu Ser Leu
            485                 490                 495
Asn Arg Glu Phe Gln Val Leu Lys Gly Thr Asp Pro Glu Pro Phe Pro
            500                 505                 510
Lys Lys Glu Cys His His Cys Asp Arg Leu Asn Asn Gly Glu Leu Ile
        515                 520                 525
Leu His Asp Cys Asp Val Ser Leu Asp Arg Glu Thr Leu Phe His Met
    530                 535                 540
Ser Ser Arg Leu Cys Gly Phe Pro Asp Asn Phe His Pro His Pro Lys
545                 550                 555                 560
Ile Lys Thr Leu Leu Glu Lys Arg Met Lys Met Ala Glu Gly Gly Val
            565                 570                 575
Gly Tyr Asp Trp Ala Met Ala Glu Glu Leu Ala Phe Ala Ser Leu Leu
            580                 585                 590
Ile Glu Gly Tyr Asn Leu Arg Leu Ser Gly Gln Asp Ser Ile Arg Gly
        595                 600                 605
Thr Phe Ser Gln Arg His Leu Val Trp Ser Asp Thr Val Thr Gly Asp
    610                 615                 620
Thr Tyr Ser Pro Leu Tyr His Leu Ser Ala Glu Gln Gly Ser Val Glu
625                 630                 635                 640
Met Tyr Asn Ser Pro Leu Ser Glu Tyr Ala Ile Leu Gly Phe Glu Tyr
                645                 650                 655
Gly Tyr Ala Gln Gln Ala Leu Lys Thr Leu Val Leu Trp Glu Ala Gln
            660                 665                 670
Phe Gly Asp Phe Ala Asn Gly Ala Gln Ile Ile Phe Asp Gln Tyr Ile
            675                 680                 685
Ser Ser Gly Ile Gln Lys Trp Asp Leu His Ser Asp Ile Val Leu Leu
        690                 695                 700
Leu Pro His Gly Tyr Glu Gly Gln Gly Pro Glu His Ser Ser Ser Arg
705                 710                 715                 720
Ile Glu Arg Tyr Leu Gln Leu Ala Ala Asn Trp Asn Phe Gln Val Val
            725                 730                 735
Leu Pro Ser Thr Pro Val Gln Tyr Phe Arg Ile Leu Arg Glu His Ala
            740                 745                 750
Lys Arg Asp Leu Ser Leu Pro Leu Val Ile Phe Thr Pro Lys Leu Leu
        755                 760                 765
Leu Arg Tyr Pro Gln Cys Val Ser Ser Ile Glu Glu Phe Thr Glu Pro
    770                 775                 780
Gly Gly Phe Arg Ala Ile Leu Glu Asp Ala Asp Pro Asn Tyr Asp Ala
785                 790                 795                 800
```

656

```
Ser Ile Leu Val Leu Cys Ser Gly Lys Ile Tyr Tyr Asp Tyr Ala Glu
              805               810               815
Met Leu Pro Gln Asp Arg Arg Lys Asp Phe Ser Cys Leu Arg Ile Glu
              820               825               830
Ser Leu Tyr Pro Leu Ala Leu Glu Asp Leu Val Ser Leu Ile Asp Lys
              835               840               845
Tyr Ser His Leu Lys His Phe Val Trp Leu Gln Glu Glu Ser Lys Asn
              850               855               860
Met Gly Ala Tyr Asp Tyr Met Phe Met Ala Leu Gln Asp Ile Leu Pro
865               870               875               880
Glu Lys Leu Leu Tyr Ile Gly Arg Pro Arg Ser Ser Ser Thr Ala Ser
              885               890               895
Gly Ser Ala Lys Leu Ser Arg Gln Glu Leu Val Thr Cys Met Glu Thr
              900               905               910
Leu Phe Ser Leu Arg
              915


        <210> 381
        <211> 166
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 381
Lys Asn Lys Lys Met Leu Cys Thr Cys Ser Arg Ile Gln Asp Gly Asn
1                 5               10               15
Pro Trp Met Lys Ser Glu Arg Leu Lys Lys Leu Glu Ser Glu Leu His
              20               25               30
Asp Leu Thr Gln Trp Met Gln Leu Gly Leu Val Pro Lys Lys Glu Ile
              35               40               45
Ser Arg His Gln Glu Glu Ile Arg Ile Leu Glu His Lys Ile Tyr Glu
              50               55               60
Glu Lys Glu Arg Leu Gln Leu Leu Lys Glu Asn Gly Glu Ile Glu Glu
65               70               75               80
Tyr Val Thr Pro Arg Arg Ser Pro Ala Lys Thr Val Tyr Pro Asp Gly
              85               90               95
Pro Ser Met Ser Asp Ile Glu Phe Val Glu Pro Thr Glu Thr Glu Ile
              100              105              110
Asp Ile Asp Pro Gly Glu Thr Val Glu Leu Glu Leu Thr Asp Glu Gly
              115              120              125
Arg Glu Asp Gly Ala Val Glu Val Asp Tyr Ser His Glu Asp Asp Glu
              130              135              140
Asp Pro Phe Ser Asp Arg Asn Arg Trp Arg Arg Gly Gly Ile Ile Asp
145              150              155              160
Pro Asp Ala Asn Glu Trp
              165


        <210> 382
        <211> 402
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 382
Lys Ser Thr Ile Pro Thr Lys Thr Met Lys Thr Leu Ser Ala Ile Ala
1                 5               10               15
Ile Ala Gly Asp Ala Val Val Ser Leu Ile Pro Met Leu Met Asn Gly
              20               25               30
Lys Ala Pro Leu Ala Leu Tyr Ile His Ile Pro Phe Cys Thr Lys Lys
              35               40               45
Cys Arg Tyr Cys Ser Phe Tyr Thr Ile Pro Tyr Lys Ser Glu Ser Val
              50               55               60
```

```
Ser Leu Tyr Cys Asn Ala Val Ile Gln Glu Gly Leu Arg Lys Leu Ala
65                  70                  75                  80
Pro Ile Gln Glu Thr His Phe Ile Glu Thr Val Phe Phe Gly Gly Gly
                85                  90                  95
Thr Pro Ser Leu Val Ser Pro Leu Asp Leu Lys Arg Ile Leu Lys Glu
            100                 105                 110
Leu Ala Pro His Ala Arg Glu Ile Thr Leu Glu Ala Asn Pro Glu Asn
            115                 120                 125
Leu Thr Val Ser Tyr Leu Arg Gln Leu Gln Glu Thr Pro Ile Asn Arg
        130                 135                 140
Ile Ser Val Gly Val Gln Thr Phe Asp Asp Ser Ile Leu Gln Leu Leu
145                 150                 155                 160
Gly Arg Thr His Ser Ser Ser Ala Ala Ile Thr Ala Leu Gln Glu Cys
                165                 170                 175
Gln Asn His Gly Phe Ser Asn Leu Ser Ile Asp Leu Ile Tyr Gly Leu
            180                 185                 190
Pro Thr Gln Ser Leu Glu Ile Phe Leu Ser Asp Leu His Gln Ala Leu
            195                 200                 205
Thr Leu Pro Ile Thr His Ile Ser Leu Tyr Asn Leu Thr Ile Asp Pro
    210                 215                 220
His Thr Ser Phe Tyr Lys His Arg Lys Ile Leu Val Pro Thr Ile Ala
225                 230                 235                 240
Gln Glu Glu Ile Leu Ala Glu Met Ser Leu Leu Ala Glu Asn Leu Leu
                245                 250                 255
Leu Ser Gln Gly Phe Gln Arg Tyr Glu Leu Ala Ser Tyr Ala Lys Pro
            260                 265                 270
Asp Tyr Pro Ala Lys His Asn Leu Tyr Tyr Trp Thr Asp Arg Pro Phe
    275                 280                 285
Leu Gly Leu Gly Val Ser Ala Ser Gln Tyr Leu His Gly Glu Arg Ser
    290                 295                 300
Lys Asn Tyr Ser His Ile Ser His Tyr Leu Arg Ala Val Arg Lys Asn
305                 310                 315                 320
Leu Pro Thr Gln Glu Thr Ser Glu Ile Leu Pro Lys Lys Glu Arg Ile
            325                 330                 335
Lys Glu Ala Leu Ala Leu Arg Leu Arg Leu Leu Glu Gly Ala Asp Leu
            340                 345                 350
Ala Glu Phe Pro Ser Thr Leu Ile Ser Met Leu Thr Gln Asp Val Lys
            355                 360                 365
Leu Gln Asn Leu Phe Ser Val His Gly Gln Cys Leu Ala Leu Asn Arg
    370                 375                 380
Gln Gly Arg Leu Phe His Asp Thr Ile Ala Glu Glu Ile Met Gly Tyr
385                 390                 395                 400
Ser Phe
```

<210> 383
<211> 600
<212> PRT
<213> Chlamydia pneumoniae

<400> 383
```
Ser Leu Pro Asn Lys Phe Arg Ala Leu Met Thr Ala Pro Thr Glu Ser
1               5                   10                  15
Arg Ser Ser Pro Pro Thr Leu Leu Glu Glu Thr Glu Pro Leu Ser Pro
            20                  25                  30
Asn Pro Ile Pro Ala Asp Ile Gln Ile Pro Arg Ile Thr Ile Ser Pro
        35                  40                  45
Pro Ser Leu Asp Val Ser Thr Val Ala Ser Ser Ala Glu Asp Ile Ser
    50                  55                  60
Val Phe Ile Ala Gly Gly Pro Arg Ser Ser Ser Ser Ala Ser Val Ala
65                  70                  75                  80
```

658

```
Ser Asp Val Tyr Glu Leu Val Cys Leu Cys Gly Gly Asp Glu Asp Pro
                85                      90                  95
Glu Pro Pro Asp Ser Glu Val Arg Thr Leu Tyr Val Asn Gly Ser Trp
            100                 105                 110
Gln Thr His Gln Glu Ala Val Gln Glu Leu Leu Tyr Ile Ser Glu Val
            115                 120                 125
Arg Gly Glu Ala Val Arg Leu Leu Tyr Asn Asp Gly Ser Gly Met Ser
    130                 135                 140
Pro Trp Pro Ile Ser Pro Cys Arg Thr Leu Pro Thr Leu Asp His Pro
145                 150                 155                 160
Leu Cys Gln Ala Leu Leu Thr Val Trp Glu Gln Phe Phe Ser Ala Pro
                165                 170                 175
Glu Asn Gln Asn Arg Glu Phe Leu Val Ile Phe Tyr Gly Asp Ala Ser
            180                 185                 190
Pro Tyr Ile Gln Gln Ala Leu Thr Gln Ser Arg His Ser Pro Arg Ile
        195                 200                 205
Val Val Val Gly Ile Ser Pro Thr Val Phe Ile Gln Gly Asp Phe Arg
    210                 215                 220
Val His Asn Tyr Arg Val Ser Gly Asp Phe Phe Ser Ser Leu Asp Cys
225                 230                 235                 240
Arg Gly Thr Arg Ala Glu Asn Thr Thr Ile Leu Pro Tyr Ser Ser Gly ·
                245                 250                 255
Leu Glu Gly Val Phe Leu Pro Ser Ile Arg Cys Pro Ser Phe Thr Trp
                260                 265                 270
Ala Val Arg Phe Gly Glu Gln Cys Leu Val Ala Asn Arg Gly Glu Asp
            275                 280                 285
Val Glu Asp Arg Gly Gly Leu Ser Gln Asp Ala Glu Arg Ser Gln Leu
            290                 295                 300
Pro His Ser Glu Arg Asp Leu Ala Val Val Ile Asp Ser Thr Asp Pro
305                 310                 315                 320
Ser Ser Met Ser Arg Leu Val Glu Trp Leu Asn Gln Gly Ser Pro Ser
                325                 330                 335
Ser Asp Met Glu Ile Asn Pro Tyr Pro Gln Arg Cys Pro Asp Val Ala
            340                 345                 350
Leu Ser Ala Leu Tyr Ala Ile Ser Arg Val Ser Gly Leu Ala Gln Glu
         355                 360                 365
Trp Ile Leu Ala Ser Val His Glu Gly Leu Asp Leu Gln Ile Cys Tyr
    370                 375                 380
Ser Leu Ile Leu Met His Thr Thr Phe Ala Val Arg Tyr Phe Phe Leu
385                 390                 395                 400
Leu Phe Thr Asn Tyr Pro Gln Ser Arg Glu Arg Phe Arg Thr Ala Arg
                405                 410                 415
Ile Val Ala Gln Ser Leu Tyr Leu Pro Ser Ile Leu Val Leu Val Phe
            420                 425                 430
Asp Cys Gly Asn Val Leu Arg Lys Leu Trp Met Pro Gln Glu Ile Leu
        435                 440             ·   445
Arg Ala Ile Phe Ile Ser Ala Ser Thr Ile Ser Gly Ser Ile Val Phe
    450                 455                 460
Val Glu Cys Thr Arg Trp Met Gly Arg Gly Leu Arg His Arg Val Gln
465                 470                 475                 480
Gln Phe Val Gln Gln Arg Val Ile Gly Ser Gly Leu Pro Val Gly Thr
                485                 490                 495
Val Arg Ala Ser Tyr Arg Asp Arg Ala Gly Phe Ile Ile Gly Phe Leu
            500                 505                 510
Gln Thr Val His Gly Gly Leu Tyr Leu Pro Val Ser Ile Met Val Leu
            515                 520                 525
Asn Gln Ile Ala Ile Gln Val Pro Arg Ile Leu Val Arg Pro Asn Asn
    530                 535                 540
Thr Ala Val Tyr Asp Leu His Asn Lys Ser Ala Glu Glu Asn Trp Ser
545                 550                 555                 560
```

Ser Gly Asp Val Leu Ala Val Gly Gln Thr Leu Asn Phe Ile Leu Cys
              565   570   575
Ala Phe Val Leu Phe Val Asn Leu Trp Phe Phe Val Lys Ser Val Leu
              580   585   590
Arg His Ser Arg Arg Arg Arg Arg
              595   600

          <210> 384
          <211> 239
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 384
Pro Val Thr Leu Tyr Leu Leu Pro Asn Thr Leu Gly Thr Arg Ala Val
  1   5   10   15
Glu Thr Leu Pro Ser Val Ile Gly Glu Leu Val His Arg Leu Asp Gly
              20   25   30
Leu Ile Val Glu Ser Asp Arg Gly Gly Arg Ala Phe Leu Ser Leu Trp
              35   40   45
Lys Ile Pro Glu Val His Lys Phe Pro Leu Ala Ile Leu Ser Lys His
      50   55   60
Ala Arg Leu Pro Lys Ala Trp Asp Phe Tyr Leu Glu Pro Ile Val Lys
65   70   75   80
His Gly Glu Asn Trp Gly Leu Ile Ser Asp Ala Gly Leu Pro Cys Ile
                  85   90   95
Ala Asp Pro Gly Ala Ser Leu Val Arg Arg Ala Arg Ala Leu Gly Ile
              100   105   110
Pro Val Gln Ala Phe Ser Gly Pro Cys Ser Ile Thr Leu Ala Leu Met
              115   120   125
Leu Ser Gly Leu Pro Ser Gln Ser Phe Thr Phe Leu Gly Tyr Leu Pro
      130   135   140
Gln Ser Pro Lys Glu Arg Val Lys Ser Ile Lys Lys Ala Ala Thr Ser
145   150   155   160
Lys Glu Val Ser Thr Ser Val Cys Ile Glu Thr Ser Tyr Arg Asn Val
              165   170   175
Tyr Thr Phe Glu Ser Leu Leu Asp Thr Leu Pro Ser Tyr Ala Glu Leu
              180   185   190
Cys Val Ala Ser Asp Leu Ser Gly Pro Ser Glu Leu Val Leu Thr Arg
              195   200   205
Gln Val Gln Ser Trp Arg Thr Thr Glu Asp Leu Gly Ser Val Lys Gln
      210   215   220
Ser Ile Thr Lys Val Pro Thr Ile Phe Leu Phe His Ile Pro Asn
225   230   235

          <210> 385
          <211> 321
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 385
Val Gln Asp Thr Thr Phe Leu Thr Leu Pro Met Gln Lys Ser Leu Thr
  1   5   10   15
Ser Phe Asp Asp Phe Ser Gln Ala Tyr Ala Glu Lys Val Pro Ala Ile
              20   25   30
Ala Leu Ile Gly Ser Ala Leu Glu Asp Asp Lys Asp Ala Leu Ile Glu
              35   40   45
Leu Leu Val Ser Glu Ser Phe Lys Glu Leu Gly Gly Gln Gly Leu Met
      50   55   60
Pro Ala Thr Leu Met Ser Trp Thr Glu Thr Phe Ala Leu Phe Gln Glu
65   70   75   80

660

```
His Glu Thr Leu Gly Ile Ile His Ala Glu Lys Phe Pro Leu Ala Thr
                85                  90                  95
Lys Glu Phe Leu Ser Arg Tyr Ala Arg Asn Pro Gln Pro His Leu Thr
                100                 105                 110
Ile Leu Ile Phe Thr Thr Lys Gln Glu Cys Phe Arg Glu Leu Ser Lys
                115                 120                 125
Ala Leu Pro Ser Ala Leu Ser Leu Ser Leu Phe Gly Glu Trp Pro Ala
        130                 135                 140
Asp Arg Gln Lys Arg Ile Ile Arg Leu Leu Leu Gln Arg Ala Glu Arg
145                 150                 155                 160
Val Gly Ile Ser Cys Ser Gln Ser Leu Ala Ser Leu Phe Leu Arg Ala
                165                 170                 175
Leu Ala Ser Thr Ser Leu Pro Asp Ile Leu Ser Glu Phe Asp Lys Leu
                180                 185                 190
Leu Cys Ser Val Gly Lys Lys Thr Ser Leu Asp His Ser Asp Ile Lys
                195                 200                 205
Glu Leu Val Val Lys Lys Glu Lys Ala Ser Leu Trp Lys Phe Arg Asp
        210                 215                 220
Ser Leu Leu Lys Arg Asp Pro Val Glu Gly His Gln Gln Leu His Phe
225                 230                 235                 240
Leu Leu Glu Asp Gly Glu Asp Pro Leu Gly Ile Ile Thr Phe Leu Arg
                245                 250                 255
Thr Gln Cys Leu Tyr Gly Leu Arg Ser Ile Glu Glu Gly Ser Lys Glu
                260                 265                 270
Asn Lys His Arg Met Phe Val Leu Tyr Gly Lys Glu Arg Leu His Gln
                275                 280                 285
Ala Leu Asn Ser Leu Phe Tyr Ala Glu Thr Leu Ile Lys Asn Asn Val
        290                 295                 300
Gln Asp Pro Ile Val Ala Val Glu Thr Leu Val Ile Arg Met Val Asn
305                 310                 315                 320
Leu


        <210> 386
        <211> 182
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 386
Val Ile Thr Cys Leu Ile Arg Gly Ile Lys Met Ile Gly Ala Gln Lys
1               5                   10                  15
Lys Gln Ser Gly Lys Lys Thr Ala Ser Arg Ala Val Arg Lys Pro Ala
                20                  25                  30
Lys Lys Val Ala Ala Lys Arg Thr Val Lys Lys Ala Thr Val Arg Lys
        35                  40                  45
Thr Ala Val Lys Lys Pro Ala Val Arg Lys Thr Ala Ala Lys Lys Thr
        50                  55                  60
Val Ala Lys Lys Thr Thr Ala Lys Arg Thr Val Arg Lys Thr Val Ala
65                  70                  75                  80
Lys Lys Pro Ala Val Lys Lys Val Ala Ala Lys Arg Val Val Lys Lys
                85                  90                  95
Thr Val Ala Lys Lys Thr Thr Ala Lys Arg Ala Val Arg Lys Thr Val
                100                 105                 110
Ala Lys Lys Pro Val Ala Arg Lys Thr Thr Val Ala Lys Gly Ser Pro
        115                 120                 125
Lys Lys Ala Ala Ala Cys Ala Leu Ala Cys His Lys Asn His Lys His
        130                 135                 140
Thr Ser Ser Cys Lys Arg Val Cys Ser Ser Thr Ala Thr Arg Lys His
145                 150                 155                 160
Gly Ser Lys Ser Arg Val Arg Thr Ala His Gly Trp Arg His Gln Leu
                165                 170                 175
```

```
Ile Lys Met Met Ser Arg
            180


        <210> 387
        <211> 507
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 387
Phe Leu Val Ile Lys Gly Glu Phe Val Val Leu Phe His Ala Gln Ala
 1               5                  10                  15
Ser Gly Arg Asn Arg Val Lys Ala Asp Ala Ile Val Leu Pro Phe Trp
            20                  25                  30
His Phe Lys Asp Ala Lys Asn Ala Ala Ser Phe Glu Ala Glu Phe Glu
            35                  40                  45
Pro Ser Tyr Leu Pro Ala Leu Glu Asn Phe Gln Gly Lys Thr Gly Glu
        50                  55                  60
Ile Glu Leu Leu Tyr Ser Ser Pro Lys Ala Lys Glu Lys Arg Ile Val
65                  70                  75                  80
Leu Leu Gly Leu Gly Lys Asn Glu Glu Leu Thr Ser Asp Val Val Phe
                85                  90                  95
Gln Thr Tyr Ala Thr Leu Thr Arg Val Leu Arg Lys Ala Lys Cys Ser
            100                 105                 110
Thr Val Asn Ile Ile Leu Pro Thr Ile Ser Glu Leu Arg Leu Ser Ala
            115                 120                 125
Glu Glu Phe Leu Val Gly Leu Ser Ser Gly Ile Leu Ser Leu Asn Tyr
            130                 135                 140
Asp Tyr Pro Arg Tyr Asn Lys Val Asp Arg Asn Leu Glu Thr Pro Leu
145                 150                 155                 160
Ser Lys Val Thr Val Ile Gly Ile Val Pro Lys Met Ala Asp Ala Ile
                165                 170                 175
Phe Arg Lys Glu Ala Ala Ile Phe Glu Gly Val Tyr Leu Thr Arg Asp
            180                 185                 190
Leu Val Asn Arg Asn Ala Asp Glu Ile Thr Pro Lys Lys Leu Ala Glu
            195                 200                 205
Val Ala Leu Asn Leu Gly Lys Glu Phe Pro Ser Ile Asp Thr Lys Val
            210                 215                 220
Leu Gly Lys Asp Ala Ile Ala Lys Glu Lys Met Gly Leu Leu Leu Ala
225                 230                 235                 240
Val Ser Lys Gly Ser Cys Val Asp Pro His Phe Ile Val Val Arg Tyr
                245                 250                 255
Gln Gly Arg Pro Lys Ser Lys Asp His Thr Val Leu Ile Gly Lys Gly
            260                 265                 270
Val Thr Phe Asp Ser Gly Gly Leu Asp Leu Lys Pro Gly Lys Ser Met
            275                 280                 285
Leu Thr Met Lys Glu Asp Met Ala Gly Gly Ala Thr Val Leu Gly Ile
            290                 295                 300
Leu Ser Ala Leu Ala Val Leu Glu Leu Pro Ile Asn Val Thr Gly Ile
305                 310                 315                 320
Ile Pro Ala Thr Glu Asn Ala Ile Asp Gly Ala Ser Tyr Lys Met Gly
                325                 330                 335
Asp Val Tyr Val Gly Met Ser Gly Leu Ser Val Glu Ile Cys Ser Thr
            340                 345                 350
Asp Ala Glu Gly Arg Leu Ile Leu Ala Asp Ala Ile Thr Tyr Ala Leu
            355                 360                 365
Lys Tyr Cys Lys Pro Thr Arg Ile Ile Asp Phe Ala Thr Leu Thr Gly
            370                 375                 380
Ala Met Val Val Ser Leu Gly Glu Glu Val Ala Gly Phe Phe Ser Asn
385                 390                 395                 400
Asn Asp Val Leu Ala Glu Asp Leu Leu Glu Ala Ser Ala Glu Thr Ser
                405                 410                 415
```

662

Glu Pro Leu Trp Arg Leu Pro Leu Val Lys Lys Tyr Asp Lys Thr Leu
            420   425   430
His Ser Asp Ile Ala Asp Met Lys Asn Leu Gly Ser Asn Arg Ala Gly
            435   440   445
Ala Ile Thr Ala Ala Leu Phe Leu Gln Arg Phe Leu Glu Glu Ser Ser
            450   455   460
Val Ala Trp Ala His Leu Asp Ile Ala Gly Thr Ala Tyr His Glu Lys
465   470   475   480
Glu Glu Asp Arg Tyr Pro Lys Tyr Ala Ser Gly Phe Gly Val Arg Ser
                485   490   495
Ile Leu Tyr Tyr Leu Glu Asn Ser Leu Ser Lys
            500   505

        <210> 388
        <211> 166
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 388
Lys Ser Lys Gly Tyr Leu Met Met Phe Gly His Phe Ala Gly Tyr Leu
1   5   10   15
Gly Ala Asp Pro Glu Glu Arg Met Thr Ser Lys Gly Lys Arg Val Ile
            20   25   30
Thr Leu Arg Leu Gly Val Lys Thr Arg Val Gly Met Lys Asp Glu Thr
            35   40   45
Val Trp Cys Lys Cys Asn Ile Trp His Asn Arg Tyr Asp Lys Met Leu
    50   55   60
Pro Tyr Leu Lys Lys Gly Ser Gly Val Ile Val Ala Gly Asp Ile Ser
65   70   75   80
Val Glu Ser Tyr Met Ser Lys Asp Gly Ser Pro Gln Ser Ser Leu Val
                85   90   95
Ile Ser Val Asp Ser Leu Lys Phe Ser Pro Phe Gly Arg Asn Glu Gly
            100   105   110
Ser Arg Ser Pro Ser Leu Glu Asp Asn His Gln Gln Val Gly Tyr Glu
            115   120   125
Ser Val Ser Val Gly Phe Glu Gly Glu Ala Leu Asp Ala Glu Ala Ile
            130   135   140
Lys Asp Lys Asp Met Tyr Ala Gly Tyr Gly Gln Glu Gln Gln Tyr Val
145   150   155   160
Cys Glu Asp Val Pro Phe
                165

        <210> 389
        <211> 177
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 389
Asn Asn Asn Asn Leu Leu Gln Gly Asp Ser Leu Met Ser Arg Gln Asn
1   5   10   15
Ala Glu Glu Asn Leu Lys Asn Phe Ala Lys Glu Leu Lys Leu Pro Asp
            20   25   30
Val Ala Phe Asp Gln Asn Asn Thr Cys Ile Leu Phe Val Asp Gly Glu
            35   40   45
Phe Ser Leu His Leu Thr Tyr Glu Glu His Ser Asp Arg Leu Tyr Val
    50   55   60
Tyr Ala Pro Leu Leu Asp Gly Leu Pro Asp Asn Thr Gln Arg Lys Leu
65   70   75   80
Ala Leu Tyr Glu Lys Leu Leu Glu Gly Ser Met Leu Gly Gly Gln Met
                85   90   95

663

```
Ala Gly Gly Gly Val Gly Val Ala Thr Lys Glu Gln Leu Ile Leu Met
            100             105                 110
His Cys Val Leu Asp Met Lys Tyr Ala Glu Thr Asn Leu Leu Lys Ala
        115             120                 125
Phe Ala Gln Leu Phe Ile Glu Thr Val Val Lys Trp Arg Thr Val Cys
    130             135                 140
Ala Asp Ile Cys Ala Gly Arg Glu Pro Ser Val Asp Thr Met Pro Gln
145             150                 155                 160
Met Pro Gln Gly Gly Gly Gly Met Gln Pro Pro Pro Thr Gly Ile Arg
            165                 170                 175
Ala
```

```
<400> 390
Ser Thr Met Glu Lys Val Ser Ser Tyr Pro Ser Val Pro Leu Pro Leu
 1           5                 10                  15
Gly Ala Ser Lys Ile Ser Pro Asn Arg Tyr Arg Phe Ala Leu Tyr Ala
            20              25                  30
Ser Gln Ala Thr Glu Val Ile Leu Ala Leu Thr Asp Glu Asn Ser Glu
        35                  40                  45
Val Ile Glu Val Pro Leu Tyr Pro Asp Thr His Arg Thr Gly Ala Ile
    50              55                  60
Trp His Ile Glu Ile Glu Gly Ile Ser Asp Gln Ser Ser Tyr Ala Phe
65                  70                  75                  80
Arg Val His Gly Pro Lys Lys His Gly Met Gln Tyr Ser Phe Lys Glu
            85                  90                  95
Tyr Leu Ala Asp Pro Tyr Ala Lys Asn Ile His Ser Pro Gln Ser Phe
            100             105                 110
Gly Ser Arg Lys Lys Gln Gly Asp Tyr Ala Phe Cys Tyr Leu Lys Glu
        115             120                 125
Glu Pro Phe Pro Trp Asp Gly Asp Gln Pro Leu His Leu Pro Lys Glu
    130             135                 140
Glu Met Ile Ile Tyr Glu Met His Val Arg Ser Phe Thr Gln Ser Ser
145             150                 155                 160
Ser Ser Arg Val His Ala Pro Gly Thr Phe Leu Gly Ile Ile Glu Lys
            165             170                 175
Ile Asp His Leu His Lys Leu Gly Ile Asn Ala Val Glu Leu Leu Pro
            180             185                 190
Ile Phe Glu Phe Asp Glu Thr Ala His Pro Phe Arg Asn Ser Lys Phe
    195                 200                 205
Pro Tyr Leu Cys Asn Tyr Trp Gly Tyr Ala Pro Leu Asn Phe Phe Ser
    210             215                 220
Pro Cys Arg Arg Tyr Ala Tyr Ala Ser Asp Pro Cys Ala Pro Ser Arg
225             230                 235                 240
Glu Phe Lys Thr Leu Val Lys Thr Leu His Gln Glu Gly Ile Glu Val
            245             250                 255
Ile Leu Asp Val Val Phe Asn His Thr Gly Leu Gln Gly Thr Thr Cys
            260             265                 270
Ser Leu Pro Trp Ile Asp Thr Pro Ser Tyr Tyr Ile Leu Asp Ala Gln
    275             280                 285
Gly His Phe Thr Asn Tyr Ser Gly Cys Gly Asn Thr Leu Asn Thr Asn
    290             295                 300
Arg Ala Pro Thr Thr Gln Trp Ile Leu Asp Ile Leu Arg Tyr Trp Val
305             310                 315                 320
Glu Glu Met His Val Asp Gly Phe Arg Phe Asp Leu Ala Ser Val Phe
            325                 330                 335
```

```
Ser Arg Gly Pro Ser Gly Ser Pro Leu Gln Phe Ala Pro Val Leu Glu
            340             345             350
Ala Ile Ser Phe Asp Pro Leu Leu Ala Ser Thr Lys Ile Ile Ala Glu
            355             360             365
Pro Trp Asp Ala Gly Gly Leu Tyr Gln Val Gly Tyr Phe Pro Thr Leu
    370             375             380
Ser Pro Arg Trp Ser Glu Trp Asn Gly Pro Tyr Arg Asp Asn Val Lys
385             390             395             400
Ala Phe Leu Asn Gly Asp Gln Asn Leu Ile Gly Thr Phe Ala Ser Arg
            405             410             415
Ile Ser Gly Ser Gln Asp Ile Tyr Pro His Gly Ser Pro Thr Asn Ser
            420             425             430
Ile Asn Tyr Val Ser Cys His Asp Gly Phe Thr Leu Cys Asp Thr Val
            435             440             445
Thr Tyr Asn His Lys His Asn Glu Ala Asn Gly Glu Asp Asn Arg Asp
    450             455             460
Gly Thr Asp Ala Asn Tyr Ser Tyr Asn Phe Gly Thr Glu Gly Lys Thr
465             470             475             480
Glu Asp Pro Gly Ile Leu Glu Val Arg Glu Arg Gln Leu Arg Asn Phe
            485             490             495
Phe Leu Thr Leu Met Val Ser Gln Gly Ile Pro Met Ile Gln Ser Gly
            500             505             510
Asp Glu Tyr Ala His Thr Ala Glu Gly Asn Asn Asn Arg Trp Ala Leu
            515             520             525
Asp Ser Asn Ala Asn Tyr Phe Leu Trp Asp Gln Leu Thr Ala Lys Pro
    530             535             540
Thr Leu Met His Phe Leu Cys Asp Leu Ile Ala Phe Arg Lys Lys Tyr
545             550             555             560
Lys Thr Leu Phe Asn Arg Gly Phe Leu Ser Asn Lys Glu Ile Ser Trp
            565             570             575
Val Asp Ala Met Gly Asn Pro Met Thr Trp Arg Pro Gly Asn Phe Leu
            580             585             590
Ala Phe Lys Ile Lys Ser Pro Lys Ala His Val Tyr Val Ala Phe His
            595             600             605
Val Gly Ala Gln Asp Gln Leu Ala Thr Leu Pro Lys Ala Ser Ser Asn
    610             615             620
Phe Leu Pro Tyr Gln Ile Val Ala Glu Ser Gln Gln Gly Phe Val Pro
625             630             635             640
Gln Asn Val Ala Thr Pro Thr Val Ser Leu Gln Pro His Thr Thr Leu
            645             650             655
Ile Ala Ile Ser His Ala Lys Glu Val Thr
            660             665


        <210> 391
        <211> 312
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 391
Thr Val Phe Asn Phe Lys Arg Phe Tyr Gln Lys Asp Ser Gln Arg Gln
1               5               10              15
Asn Gly Asn Thr Thr Cys Leu Arg Pro Phe Lys Lys Thr Cys Lys Glu
            20              25              30
Leu Ile Glu Phe Arg Arg Arg Thr Val Lys Leu Leu Lys Asn Val Leu
            35              40              45
Leu Gly Leu Phe Phe Ser Met Ser Ile Ser Gly Phe Ser Glu Val Lys
    50              55              60
Val Ser Asp Thr Phe Val Lys Gln Asp Thr Val Val Glu Pro Lys Ile
65              70              75              80
Arg Val Leu Leu Ser Asn Glu Ser Thr Thr Ala Leu Ile Glu Ala Lys
            85              90              95
```

```
Gly Pro Tyr Arg Ile Tyr Gly Asp Asn Val Leu Leu Asp Thr Ala Ile
        100             105                 110
Gln Gly Gln Arg Cys Val Val His Ala Leu Tyr Glu Gly Ile Arg Trp
        115             120                 125
Gly Glu Phe Tyr Pro Gly Leu Gln Cys Leu Lys Ile Glu Pro Val Asp
    130             135                 140
Asp Thr Ala Ser Leu Phe Phe Asn Gly Ile Gln Tyr Gln Gly Ser Leu
145             150                 155                 160
Tyr Val His Arg Lys Asp Asn His Cys Ile Met Val Ser Asn Glu Val
            165             170                 175
Thr Ile Glu Asp Tyr Leu Lys Ser Val Leu Ser Ile Lys Tyr Leu Glu
        180             185                 190
Glu Leu Asp Lys Glu Ala Leu Ser Ala Cys Ile Ile Leu Glu Arg Thr
        195             200                 205
Ala Leu Tyr Glu Lys Leu Leu Ala Arg Asn Pro Gln Asn Phe Trp His
    210             215                 220
Val Lys Ala Glu Glu Glu Gly Tyr Ala Gly Phe Gly Val Thr Lys Gln
225             230                 235                 240
Phe Tyr Gly Val Glu Glu Ala Ile Asp Trp Thr Ala Arg Leu Val Val
            245             250                 255
Asp Ser Pro Gln Gly Leu Ile Ile Asp Ala Gln Gly Leu Leu Gln Ser
        260             265                 270
Asn Val Asp Arg Leu Ala Ile Glu Gly Phe Asn Ala Arg Gln Ile Leu
        275             280                 285
Glu Lys Phe Tyr Lys Asp Val Asp Phe Val Val Ile Glu Ser Trp Asn
    290             295                 300
Glu Glu Leu Asp Gly Glu Ile Arg
305             310


    <210> 392
    <211> 346
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 392
Arg Lys Ser Asp Arg Glu Gly Ser Tyr Met Thr His Gln Val Ala Val
 1           5               10                  15
Leu His Gln Asp Lys Lys Phe Asp Val Ser Leu Arg Pro Lys Gly Leu
        20              25                  30
Glu Glu Phe Tyr Gly Gln His His Leu Lys Glu Arg Leu Asp Leu Phe
        35              40                  45
Leu Cys Ala Ala Leu Gln Arg Gly Glu Val Pro Gly His Cys Leu Phe
    50              55                  60
Phe Gly Pro Pro Gly Leu Gly Lys Thr Ser Leu Ala His Ile Val Ala
65              70                  75                  80
Tyr Thr Val Gly Lys Gly Leu Val Leu Ala Ser Gly Pro Gln Leu Ile
            85              90                  95
Lys Pro Ser Asp Leu Leu Gly Leu Leu Thr Ser Leu Gln Glu Gly Asp
        100             105                 110
Val Phe Phe Ile Asp Glu Ile His Arg Met Gly Lys Val Ala Glu Glu
        115             120                 125
Tyr Leu Tyr Ser Ala Met Glu Asp Phe Lys Val Asp Ile Thr Ile Asp
    130             135                 140
Ser Gly Pro Gly Ala Arg Ser Val Arg Val Asp Leu Ala Pro Phe Thr
145             150                 155                 160
Leu Val Gly Ala Thr Thr Arg Ser Gly Met Leu Ser Glu Pro Leu Arg
            165             170                 175
Ala Arg Phe Ala Phe Ser Ala Arg Leu Ser Tyr Tyr Ser Asp Gln Asp
        180             185                 190
Leu Lys Glu Ile Leu Val Arg Ser Ser His Leu Leu Gly Ile Glu Ala
        195             200                 205
```

666

Asp Ser Ser Ala Leu Leu Glu Ile Ala Lys Arg Ser Arg Gly Thr Pro
    210   215   220
Arg Leu Ala Asn His Leu Leu Arg Trp Val Arg Asp Phe Ala Gln Ile
225   230   235   240
Arg Glu Gly Asn Cys Ile Asn Gly Asp Val Ala Glu Lys Ala Leu Ala
                245   250   255
Met Leu Leu Ile Asp Asp Trp Gly Leu Asn Glu Ile Asp Ile Lys Leu
                260   265   270
Leu Thr Thr Ile Ile Asp Tyr Tyr Gln Gly Gly Pro Val Gly Ile Lys
        275   280   285
Thr Leu Ser Val Ala Val Gly Glu Asp Ile Lys Thr Leu Glu Asp Val
        290   295   300
Tyr Glu Pro Phe Leu Ile Leu Lys Gly Phe Ile Lys Lys Thr Pro Arg
305   310   315   320
Gly Arg Met Val Thr Gln Leu Ala Tyr Asp His Leu Lys Arg His Ala
                325   330   335
Lys Asn Leu Leu Ser Leu Gly Glu Gly Gln
                340   345

<210> 393
<211> 64
<212> PRT
<213> Chlamydia pneumoniae

<400> 393
Lys Asp Gln Leu Tyr Lys Gln Glu Lys Pro Ile Pro Lys Ala Thr Ile
1   5   10   15
Leu Ser Arg Asn Leu Glu Val Met Leu Asp Asn Pro Lys Gly Lys Arg
            20   25   30
Gln Thr Leu Phe Leu Gly Arg Thr Ser Gly Arg Ser Ala Leu Tyr Ser
        35   40   45
Tyr Ser Arg Arg Ile Leu Val Leu Leu Asn Ala Phe Met Arg Gly Pro
    50   55   60

<210> 394
<211> 190
<212> PRT
<213> Chlamydia pneumoniae

<400> 394
Met Ser Ile Lys Glu Asp Lys Trp Ile Arg Glu Met Ala Leu Asn Ala
1   5   10   15
Asp Met Ile His Pro Phe Val Asn Gly Gln Val Asn Val Asn Glu Glu
            20   25   30
Thr Gly Glu Lys Leu Ile Ser Tyr Gly Leu Ser Ser Tyr Gly Tyr Asp
            35   40   45
Leu Arg Leu Ser Arg Glu Phe Lys Val Phe Thr Asn Val Tyr Asn Ser
    50   55   60
Val Val Asp Pro Lys Cys Phe Thr Glu Asp Ile Phe Ile Ser Ile Thr
65   70   75   80
Asp Asp Val Cys Ile Val Pro Pro Asn Ser Phe Ala Leu Ala Arg Ser
                85   90   95
Val Glu Tyr Phe Arg Ile Pro Arg Asn Val Leu Thr Met Cys Ile Gly
            100   105   110
Lys Ser Thr Tyr Ala Arg Cys Gly Ile Ile Val Asn Val Thr Pro Phe
        115   120   125
Glu Pro Glu Trp Glu Gly His Val Thr Ile Glu Ile Ser Asn Thr Thr
    130   135   140
Pro Leu Pro Ala Lys Ile Tyr Ala Asn Glu Gly Ile Ala Gln Val Leu
145   150   155   160

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```
Phe Phe Glu Ser Ser Thr Thr Cys Glu Val Ser Tyr Ala Asp Arg Lys
                165             170             175
Gly Lys Tyr Gln Lys Gln Gln Gly Ile Thr Val Pro Cys Val
            180             185             190


        <210> 395
        <211> 165
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 395
Lys Phe Leu Thr Leu Arg His Cys Gln Arg Lys Phe Thr Leu Met Lys
 1               5                  10              15
Gly Leu Pro Arg Ser Tyr Ser Leu Ser Leu Val Arg Pro Ala Arg Phe
            20              25              30
Leu Met Gln Thr Glu Lys Glu Ser Ile Lys Ser Asn Lys Ala Ser Pro
        35              40              45
Tyr Leu Val Ser Lys Val Ser Val Arg Lys Lys Asn Trp Gly Phe Arg
    50              55              60
Leu Leu Glu Glu Val Met Ile Lys Ser Trp Trp Val Ile Phe Ser Ile
65              70              75              80
Leu Ile Gly Gly Phe Val Tyr Asp Arg Ala Ile Gln Glu Leu Arg Thr
            85              90              95
Glu Glu Leu Arg Leu Gln Ser Lys Val Ser Ser Leu Cys Gln Asp Ile
        100             105             110
Leu Ser Ala Gln Glu Lys Gln Arg Gln Leu Gln Leu His Leu Gln His
        115             120             125
Trp Gln Asp Ser Ala Ala Ile Glu Ala Ala Leu Ile Gln Arg Leu Gly
    130             135             140
Leu Ile Pro Lys Gly Tyr Lys Lys Leu Cys Val Ser Pro Lys Gln Gln
145             150             155             160
Ser Glu Asn Lys Asp
                165


        <210> 396
        <211> 414
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 396
Lys Glu Thr Met Ile Pro Thr Met Leu Met Phe Phe Ile Ile Cys Phe
 1               5                  10              15
Thr Leu Cys Ser Gly Phe Ile Ser Leu Ser Gln Ile Ala Leu Phe Ser
            20              25              30
Leu Pro Thr Ser Leu Ile Ser His Tyr Lys Arg Ser Lys Ser Lys Lys
        35              40              45
Gln Gln Arg Val Ala Thr Leu Leu Leu His Pro His His Leu Leu Ile
    50              55              60
Thr Leu Ile Phe Cys Asp Ile Gly Leu Asn Ile Ala Ile Gln Asn Cys
65              70              75              80
Phe Ala Ile Leu Phe Gly Asp Ala Ala Ser Trp Trp Phe Thr Val Gly
            85              90              95
Leu Pro Leu Ala Ile Thr Leu Ile Leu Gly Glu Ile Leu Pro Lys Ala
        100             105             110
Val Ala Leu Pro Phe Asn Thr Gln Ile Ala Ser Ser Val Ala Pro Leu
        115             120             125
Ile Leu Cys Val Thr Lys Ile Phe Lys Pro Leu Leu His Trp Gly Ile
    130             135             140
Val Gly Ile Asn Tyr Val Val Gln Trp Ile Leu Ser Lys Gln Gln Ile
145             150             155             160
```

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```
Asp Ile Ile Gln Pro Gln Glu Leu Lys Glu Val Leu Gln Ser Cys Lys
                 165             170                 175
Asp Phe Gly Val Val Asn Gln Glu Glu Ser Arg Leu Leu Tyr Gly Tyr
                 180             185                 190
Leu Ser Leu Ser Asp Cys Ser Val Lys Glu Arg Met Gln Pro Arg Gln
         195             200                 205
Asp Ile Leu Phe Tyr Asp Ile Gln Thr Pro Leu Glu Asn Leu Tyr Leu
         210             215                 220
Leu Phe Ser Lys Gln His Cys Ser Arg Val Pro Ile Cys Asn Asp Asn
225             230                 235                 240
Leu Gln Asn Leu Leu Gly Ile Cys Thr Ala Arg Ser Leu Leu Leu His
                 245             250                 255
Asp Lys Pro Leu Gln Ser Ser Asp Asp Leu Leu Pro Leu Leu Lys Lys
                 260             265                 270
Pro Tyr Tyr Met Pro Glu Thr Ile Ser Ala Lys Met Ala Leu Cys Gln
                 275             280                 285
Met Ala Ala Glu Asp Glu Thr Leu Gly Met Ile Ile Asp Glu Tyr Gly
         290             295                 300
Ser Ile Glu Gly Leu Ile Thr Gln Glu Asp Leu Phe Glu Ile Val Ala
305             310                 315                 320
Gly Glu Ile Val Asp Gln Arg Asp Asn Lys Ile Leu Tyr Thr Thr Ser
                 325             330                 335
Gly Ala Asp Val Ile Ile Ala Ser Gly Thr Leu Glu Leu Arg Glu Phe
                 340             345                 350
Ser Glu Ile Phe Asp Ile Asn Leu Pro Thr Asn Asn Asn Ile Ala Thr
                 355             360                 365
Ile Gly Gly Trp Leu Ile Glu Gln Ile Gly Thr Ile Pro Thr Thr Gly
370                 375                 380
Met Lys Leu Ser Trp Asn Asn Leu Leu Phe Gln Val Leu Asp Ala Ala
385                 390                 395                 400
Pro Asn Arg Ile Arg Arg Val Tyr Ile Arg Lys Leu Tyr Asp
                 405                 410
```

        <210> 397
        <211> 407
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 397
```
Gly Asn Cys Met Thr Asn Ser Ala Leu Phe Trp Ile Gly Val Asn Ile
1             5                 10                  15
Ile Cys Ile Val Leu Gln Gly Phe Tyr Ser Met Met Glu Met Ala Cys
                 20              25                  30
Val Ser Phe Asn Arg Val Arg Leu Gln Tyr Tyr Leu Thr Lys Asp His
         35              40                  45
Lys Lys Ala Arg Tyr Ile Asn Phe Leu Ile Arg Arg Pro Tyr Arg Leu
     50              55                  60
Phe Gly Thr Val Met Leu Gly Val Asn Ile Ala Leu Gln Val Gly Ser
65              70                  75                  80
Glu Ser Ser Arg Asn Cys Tyr Arg Ala Leu Gly Ile Thr Pro Asp Tyr
                 85              90                  95
Ala Pro Phe Thr Gln Ile Phe Ile Val Val Ile Phe Ala Glu Leu Leu
                 100             105                 110
Pro Leu Thr Ile Ser Arg Lys Ile Pro Glu Lys Leu Ala Leu Trp Gly
         115             120                 125
Ala Pro Ile Leu Tyr Tyr Ser His Tyr Ile Phe Tyr Pro Leu Ile Gln
         130             135                 140
Leu Ile Gly Ser Leu Thr Glu Gly Leu Tyr Tyr Leu Leu Asn Ile Arg
145             150                 155                 160
Lys Glu Lys Leu Asn Ser Thr Leu Ser Arg Asp Glu Phe Gln Lys Ala
                 165             170                 175
```

```
Leu Glu Thr His His Glu Glu Gln Asp Phe Asn Thr Ile Ala Thr Asn
            180                     185                 190
Ile Phe Ser Leu Ser Ala Thr Cys Ala Asp Gln Val Cys Gln Pro Leu
            195                     200                 205
Glu Gln Val Thr Met Leu Pro Ser Ser Ala Asn Val Lys Asp Phe Cys
            210                     215                 220
Arg Thr Ile Lys Asn Thr Asp Ile Asn Phe Ile Pro Val Tyr His Lys
225                     230                 235                 240
Ala Arg Lys Asn Val Ile Gly Ile Ala His Pro Lys Asp Phe Val Asn
            245                     250                 255
Lys Ala Leu Asp Glu Pro Leu Ile Asn Asn Leu His Ser Pro Trp Phe
            260                     265                 270
Ile Thr Ala Lys Ser Lys Leu Ile Arg Ile Leu Lys Glu Phe Arg Asp
            275                     280                 285
Asn Arg Ser Ser Val Ala Val Val Leu Asn Ala Ser Gly Glu Pro Ile
            290                     295                 300
Gly Ile Leu Ser Leu Asn Ala Ile Phe Lys Ile Leu Phe Asn Thr Thr
305                     310                 315                 320
Asn Ile Ala His Leu Lys Pro Lys Thr Ile Ser Val Ile Glu Arg Thr
            325                     330                 335
Phe Pro Gly Asn Ser Arg Ile Lys Asp Leu Gln Lys Glu Leu Asp Ile
            340                     345                 350
Gln Phe Pro Gln Tyr Pro Val Glu Thr Leu Ala Gln Leu Val Leu Gln
            355                     360                 365
Leu Leu Asp Ser Pro Ala Glu Val Gly Thr Ser Val Ile Ile Asn Asn
            370                     375                 380
Leu Leu Leu Glu Val Lys Glu Met Ser Leu Ser Gly Ile Lys Thr Val
385                     390                 395                 400
Ser Ile Lys Asn Leu Leu Ser
            405

        <210> 398
        <211> 373
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 398
Tyr Ser Met Ile Tyr Leu Asp Asn Asn Ala Met Thr Pro Pro Glu Arg
 1               5                   10                  15
Gly Leu Leu Glu Phe Leu Gln Lys Thr Phe Leu Ile Glu Gly Thr Tyr
            20                  25                  30
Ala Asn Pro Ser Ser Val His Gln Leu Gly Lys Lys Ser Arg Gln Leu
            35                  40                  45
Val Leu Glu Ala Ser His Trp Met Gln Lys Val Leu Ser Phe Gln Gly
            50                  55                  60
Arg Val Leu Tyr Thr Ser Gly Ala Thr Glu Ser Leu Asn Leu Ala Ile
65                  70                  75                  80
Ala Ser Leu Pro Lys Asp Ser His Val Ile Thr Ser Gly Ser Glu His
            85                  90                  95
Pro Ala Ile Leu Glu Pro Leu Lys His Ser Ser Leu Ser Val Ser Tyr
            100                 105                 110
Leu Asn Pro Glu Glu Gly Arg Cys Val Leu Thr Ile Glu Gln Ile Glu
            115                 120                 125
Arg Ala Val Thr Pro Lys Thr Ser Ala Ile Ile Leu Gly Trp Val Asn
            130                 135                 140
Ser Glu Thr Gly Ala Lys Ala Asp Ile Ala Ala Ile Ala His Phe Ala
145                 150                 155                 160
Gln Glu Arg Gln Leu Gln Phe Ile Val Asp Ala Thr Ala Asn Val Gly
            165                 170                 175
Lys Glu Arg Ile Val Leu Pro Ser Gly Val Thr Met Ala Ala Phe Ser
            180                 185                 190
```

```
Gly His Lys Phe His Ala Leu Ser Gly Ile Gly Ala Leu Leu Val Ser
    195                 200             205
Pro Gly Val Lys Leu His Pro Gln Leu Trp Gly Gly Gly Gln Gln Gly
    210             215             220
Gly Leu Arg Ala Gly Thr Glu Asn Leu Trp Gly Ile Ala Ser Leu Leu
225             230             235             240
Tyr Ile Phe Lys Tyr Leu Asp Leu His Gln Glu Arg Ile Ser Gln Glu
            245             250             255
Ile Leu Thr His Arg Asn Gly Phe Glu Lys Ala Ile Lys Ala Arg Ile
            260             265             270
Pro Asp Val His Ile His Cys Ala Asp Gln Pro Arg Ala Asn Asn Val
            275             280             285
Ser Ala Ile Ala Phe Pro Pro Leu Glu Gly Glu Val Leu Gln Ile Ala
    290             295             300
Leu Asp Ile Glu Gly Val Ala Cys Gly Tyr Gly Ser Ala Cys Ser Ser
305             310             315             320
Gly Ala Thr Ala Pro Phe Lys Ser Leu Val Ser Met Gly Val Asp Glu
            325             330             335
Glu Leu Thr Leu Ala Thr Leu Arg Phe Ser Phe Ser His Leu Leu Leu
            340             345             350
Gln Glu Asp Val Glu Arg Ala Val Gly Ile Ile Glu Lys Val Val Glu
            355             360             365
Arg Leu Lys Asn Ser
    370


    <210> 399
    <211> 248
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 399
Glu His Phe Val Asp Phe Asp Tyr Phe Gly Leu Ser Asp Ile Gly Arg
  1             5               10              15
Val Arg Ala Arg Asn Glu Asp Phe Trp Gln Val Asn Leu Met Ser Gln
            20              25              30
Val Val Ala Ile Ala Asp Gly Val Gly Gly Arg Leu Gly Gly Asp Ile
            35              40              45
Ala Ser Gln Glu Ala Val Thr Ser Leu Met Glu Leu Ile Asp Glu Gln
    50              55              60
Gln Ser Lys Leu Met Gly Tyr Gly Asp Asp Gln Tyr Lys Glu Thr Leu
65              70              75              80
Lys Lys Ile Leu Leu Glu Val Asn Gly Val Val Tyr Glu His Gly Gln
            85              90              95
Met Glu Glu His Leu Gln Gly Met Gly Thr Thr Leu Ser Phe Ile Gln
            100             105             110
Phe Arg Lys Asp Arg Ala Trp Leu Phe His Val Gly Asp Ser Arg Ile
    115             120             125
Tyr Arg Ile Arg Glu Gly Glu Leu Arg Arg Leu Thr Glu Asp His Ser
    130             135             140
Leu Glu Asn Gln Leu Lys Asn Arg Tyr Gly Leu Pro Lys Gln Ser Asp
145             150             155             160
Lys Val Tyr Ser Tyr Arg His Ile Leu Thr Asn Val Leu Gly Ser Arg
            165             170             175
Pro Tyr Val Met Pro Asp Ile Arg Asn Leu Pro Cys Glu Lys Glu Asp
            180             185             190
Leu Tyr Cys Leu Cys Ser Asp Gly Leu Thr Asn Met Val Pro Asp Ile
            195             200             205
Asp Ile Arg Asp Ile Leu Asn Gln Pro Ala Thr Leu Glu Glu Arg Gly
    210             215             220
Asn Ala Leu Ile Ser Leu Ala Asn Thr Arg Gly Gly Asp Asp Asn Ala
225             230             235             240
```

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Thr Val Val Leu Val Arg Ile Gln
                    245

        <210> 400
        <211> 61
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 400
Ile Glu Glu Leu Pro Met Gln Ile Glu Asn Ser Ser Ile Leu Phe Ala
1   5   10   15
Glu Val Val Met Lys Trp Phe Ile Phe Ser Val Ile Ser Ala Pro Val
                20   25   30
Val Phe Leu Pro Gly Cys Thr Leu Ile Pro Lys Glu Lys Val Thr Lys
            35   40   45
Val Pro Ser Gln Leu Trp Ser Glu Ser Leu Ser Gln Pro
    50   55   60

        <210> 401
        <211> 255
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 401
Tyr Lys Leu Met Arg Val Leu Asn Gly Lys Ser Leu Asn Cys Glu Ser
1   5   10   15
Ile Asp Leu Lys Ser Lys Asn Phe Pro Arg Ala Arg Ile Phe Cys Lys
                20   25   30
Ile Ser Asn Leu Arg Thr Val Thr Met Arg Lys Met Leu Val Leu Leu
            35   40   45
Ala Ser Leu Gly Leu Leu Ser Pro Thr Leu Ser Ser Cys Thr His Leu
    50   55   60
Gly Ser Ser Gly Ser Tyr His Pro Lys Leu Tyr Thr Ser Gly Ser Lys
65   70   75   80
Thr Lys Gly Val Ile Ala Met Leu Pro Val Phe His Arg Pro Gly Lys
                85   90   95
Ser Leu Glu Pro Leu Pro Trp Asn Leu Gln Gly Glu Phe Thr Glu Glu
                100   105   110
Ile Ser Lys Arg Phe Tyr Ala Ser Glu Lys Val Phe Leu Ile Lys His
            115   120   125
Asn Ala Ser Pro Gln Thr Val Ser Gln Phe Tyr Ala Pro Ile Ala Asn
    130   135   140
Arg Leu Pro Glu Thr Ile Ile Glu Gln Phe Leu Pro Ala Glu Phe Ile
145   150   155   160
Val Ala Thr Glu Leu Leu Glu Gln Lys Thr Gly Lys Glu Ala Gly Val
                165   170   175
Asp Ser Val Thr Ala Ser Val Arg Val Arg Val Phe Asp Ile Arg His
                180   185   190
His Lys Ile Ala Leu Ile Tyr Gln Glu Ile Ile Glu Cys Ser Gln Pro
            195   200   205
Leu Thr Thr Leu Val Asn Asp Tyr His Arg Tyr Gly Trp Asn Ser Lys
    210   215   220
His Phe Asp Ser Thr Pro Met Gly Leu Met His Ser Arg Leu Phe Arg
225   230   235   240
Glu Val Val Ala Arg Val Glu Gly Tyr Val Cys Ala Asn Tyr Ser
                245   250   255

        <210> 402
        <211> 260
        <212> PRT
        <213> Chlamydia pneumoniae

                            672

<400> 402

Ser Lys Glu Met Ser Lys Phe Ile Leu Leu Leu Ser Leu Gly Val Ala
1   5   10   15

Ala Leu Ala Ser Lys Asn Phe Phe Ile Trp Pro Ala Pro Ser Gly Lys
            20   25   30

Thr Pro Leu Lys Leu Arg Gln Val Leu Phe Gly Gly Ala Leu Leu Val
            35   40   45

Phe Ser Ser Leu Val Ala Leu Ser Val Ser Ser Gln Thr Ala Glu Leu
    50   55   60

Leu Ser Thr Met Thr Gly Ile Ser Leu Ala Phe Ala Phe Leu Phe Tyr
65   70   75   80

Leu Leu Phe Leu Pro Lys Asp Ile Thr Arg Ala Ile Leu Phe Ser Gly
            85   90   95

Glu Arg Pro Val Lys Thr Ser Trp Arg Ala Leu Gly Ser Ala Ile Arg
            100   105   110

Met Trp Ile Ile Ile Ile Pro Val Thr Gln Leu Ile Gly Ile Met Met
        115   120   125

Ser Lys Phe Leu Thr Leu Val Leu Pro Thr Gln Glu Ile His Thr Gln
    130   135   140

Glu Val Thr Gln Glu Val Gln Asn Ser Leu Pro Ile Thr Gly His Tyr
145   150   155   160

Ile Ser Met Ile Leu Asn Leu Gly Val Leu Thr Pro Phe Gly Glu Glu
            165   170   175

Val Phe Phe Arg Gly Ile Leu Gln Thr Phe Leu Lys Asn Lys Met Thr
            180   185   190

Arg Ile Ala Ala Val Leu Cys Ser Ser Ile Ile Phe Ser Phe Ile His
    195   200   205

Ile Glu His Ser Leu Gly Ser Trp Val Phe Val Pro Val Leu Phe Val
210   215   220

Phe Ser Leu Ser Ala Gly Phe Leu Tyr Glu Lys Asp Arg His Ile Leu
225   230   235   240

Ser Pro Ile Ala Leu His Gly Leu Phe Asn Leu Thr Ser Leu Leu Phe
            245   250   255

Leu Gly Ile Lys
            260

<210> 403
<211> 130
<212> PRT
<213> Chlamydia pneumoniae

<400> 403

Met Arg Asp His Ala Phe Ser Lys Leu Ile Gly Thr Val Arg Ala Met
1   5   10   15

Val Val Glu Gly Arg Cys Pro Trp Ser Leu Gln Gln Ser Leu Val Ser
            20   25   30

Met Val Glu His Ile Leu Gly Glu Cys Gln Glu Phe His Glu Ala Val
            35   40   45

Leu Gln Gly Lys Thr Val Gln Glu Val Gly Ser Glu Ala Gly Asp Val
    50   55   60

Leu Thr Leu Val Leu Ile Leu Cys Phe Leu Leu Glu Arg Glu Gly Val
65   70   75   80

Leu Ala Ser Glu Asp Val Ala Asn Glu Ala Met Glu Lys Leu Arg Arg
            85   90   95

Arg Ala Pro Tyr Ile Phe Ala Glu Asp Tyr Lys Pro Val Ser Ile Glu
            100   105   110

Glu Ala Asp Arg Leu Trp Glu Leu Ala Lys His Arg Glu Lys Asn Glu
    115   120   125

Ser Thr
130

673

<210> 404
<211> 375
<212> PRT
<213> Chlamydia pneumoniae

<400> 404
```
Asn Phe Lys Arg Phe Cys Met Thr Lys Ile Ala Phe Ser Glu Lys Ala
1               5                   10                  15
Lys Asn Phe Pro Val Glu Ala Leu Lys Lys Trp Phe Glu Lys Asn Lys
            20                  25                  30
Arg Ser Leu Pro Trp Arg Asp Asn Pro Thr Pro Tyr Ser Val Trp Val
        35                  40                  45
Ser Glu Val Met Leu Gln Gln Thr Arg Ala Glu Val Val Ile Asp Tyr
    50                  55                  60
Phe Asn Gln Trp Met Glu Arg Phe Pro Thr Ile Glu Ser Leu Ala Ala
65                  70                  75                  80
Ala Lys Glu Glu Asp Val Ile Lys Leu Trp Glu Gly Leu Gly Tyr Tyr
            85                  90                  95
Ser Arg Ala Arg His Leu Leu Glu Gly Ala Arg Met Val Met Glu Glu
            100                 105                 110
Phe His Gly Lys Ile Pro Asp Asp Ala Ile Ser Leu Ala Gln Ile Arg
        115                 120                 125
Gly Val Gly Pro Tyr Thr Val His Ala Ile Leu Ala Phe Ala Phe Lys
        130                 135                 140
Arg Arg Ala Ala Ala Val Asp Gly Asn Val Leu Arg Val Leu Ser Arg
145                 150                 155                 160
Ile Phe Leu Ile Glu Thr Ser Ile Asp Leu Glu Ser Thr Arg Thr Trp
                165                 170                 175
Val Ser Arg Ile Ala Gln Ala Leu Leu Pro His Lys Ser Pro Glu Val
            180                 185                 190
Ile Ala Glu Ala Leu Ile Glu Leu Gly Ala Cys Ile Cys Lys Lys Val
        195                 200                 205
Pro Gln Cys His Arg Cys Pro Val Arg Gln Ala Cys Gly Ala Trp Arg
    210                 215                 220
Glu Asn Lys Gln Phe Val Leu Pro Val Arg His Ala Arg Lys Lys Val
225                 230                 235                 240
Ile Phe Leu His Arg Leu Val Ala Ile Val Leu Tyr Asp Gly Ser Leu
                245                 250                 255
Val Val Glu Lys Arg Arg Pro Lys Glu Met Met Ala Gly Leu Tyr Glu
            260                 265                 270
Phe Pro Tyr Ile Glu Val Glu Pro Glu Glu Gly Leu Gln Asp Ile Glu
    275                 280                 285
Gly Phe Thr Lys Lys Met Glu Leu Ser Leu Glu Ser Pro Leu Glu Phe
    290                 295                 300
Leu Gly Asn Leu Lys Glu Gln Arg His Ala Phe Thr Asn His Lys Val
305                 310                 315                 320
His Leu Cys Pro Ile Ile Phe Lys Ala Thr Ser Leu Pro Gln Phe Gly
            325                 330                 335
Glu Leu His Leu Leu Ser Asp Ile Asp His Leu Ala Phe Ser Ser Gly
        340                 345                 350
His Lys Lys Ile Lys Asp Ala Leu Leu Ile Tyr Leu Gly Asp Val Arg
    355                 360                 365
Ser Arg Glu Ser Ile Gly Val
    370                 375
```

<210> 405
<211> 234
<212> PRT
<213> Chlamydia pneumoniae

```
          <400> 405
Asn Phe Met Gln Leu Ser Asn Asp Lys Arg Ala Ala Leu Gln Tyr Phe
 1           5                   10                  15
Met Glu Asn Phe Ser Trp Leu Ala Thr Gln Val Ser Arg Leu Ser Ser
             20                  25                  30
Phe Leu Arg Ser Gln Leu Pro Asn His Ser Lys Gln Glu Ile Leu Ala
         35                  40                  45
Ser Ile Arg Gln His Arg Cys Arg Val Asn Gly Phe Ile Glu Arg Phe
     50                  55                  60
Glu Ser Tyr Lys Val Gln Pro Gly Asp Arg Val Ser Leu Ser Leu Ile
65                  70                  75                  80
Pro Ser Thr Lys Gln Gln Pro Ser Ile Leu Trp Glu Asp Asp Tyr Ser
             85                  90                  95
Ile Ile Tyr Glu Lys Pro Pro His Leu Thr Thr Glu Gln Met Ala His
             100                 105                 110
Met Thr Arg Phe Phe Thr Val His Arg Leu Asp Lys Gly Thr Ser Gly
             115                 120                 125
Cys Leu Leu Met Gly Lys Ser Lys Gln Ala Ala Thr Glu Leu Met Lys
     130                 135                 140
Leu Phe Lys Gln Arg Lys Ile His Lys Gln Tyr Ile Ala Phe Val Phe
145                 150                 155                 160
Gly His Pro Lys Lys Lys Phe Gly Thr Val Lys Ser Tyr Thr Ala Pro
             165                 170                 175
Val Tyr Arg Arg Cys Gly Ala Val Ile Phe Gly Ala Ala Gly Pro Ser
             180                 185                 190
Gln Gly Glu Pro Ile Lys Ser Ala Tyr Lys Trp Asp Cys Trp Val Ile
             195                 200                 205
Leu Leu Ser Glu Met Ser Thr Thr Asp Leu Lys Asn Ser Leu Pro Arg
     210                 215                 220
Ser Ser Ala Leu Ser Ser Met Leu Thr Pro
225                 230


          <210> 406
          <211> 364
          <212> PRT
          <213> Chlamydia pneumoniae


          <400> 406
Glu Leu Glu Ala Leu Glu Gln Lys Tyr Gly Lys Ala Val Leu Leu Ile
 1           5                   10                  15
Ala Leu Ser Glu Leu Gly Ile Asp Thr Met Ser Leu Leu Ser Gly His
             20                  25                  30
Arg Leu Glu Gly Phe Pro Pro Ile Ala Glu Val Met Ala Ala Cys Asp
         35                  40                  45
Arg Cys Ser Met Asp Phe Cys Glu Ile Leu Lys Ser Gln Ser Met Asp
     50                  55                  60
Leu Trp Ala Asp Ala Ala Ser Cys Val Asp Gly Leu Leu Gln Asp Pro
65                  70                  75                  80
Phe Trp Ser Thr Ala Ile Ala Ser Gly Ile Ala Lys Ser Ser Leu Gln
             85                  90                  95
Glu Thr Glu Phe Glu Cys Glu Ser Lys Val Met Val Leu Ser Ser Trp
             100                 105                 110
Gly Glu Gln Gly Ala Gln Val Cys Ser Pro Phe Asn Leu Glu Arg Ile
             115                 120                 125
Cys Met Ser Phe Pro Ser Leu Lys Val Phe Ser Leu Lys Lys Asn Gly
     130                 135                 140
Cys Glu Asn Met Gly Ile Gln Leu Ser Ala Ser Cys Met Asn Leu Leu
145                 150                 155                 160
Met Ser Ile Phe Phe Val Ala Thr Asn Gly Gly Ser Thr Pro Ile Trp
             165                 170                 175
```

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```
Ile Thr Lys Glu Asn Leu Met Ala Leu Val Ala Leu Val Leu Ser His
        180                 185                 190
Tyr Gln Cys Tyr Phe Val Pro Ala Thr Gly Asp Pro Gln Arg Gly Asn
        195                 200                 205
Ile Leu Gly Asn Pro Glu Val Asn Ala Ile Leu Ala Arg Gly Met Gly
        210                 215                 220
Met Arg Val Asp Leu Glu Arg Lys Arg Gly Gly Glu Ser Ser Ser Ser
225                 230                 235                 240
Arg Tyr Leu Glu Leu Ala Ala Arg Cys Phe Glu Asn Ser Leu Thr Lys
        245                 250                 255
Thr Ser Leu Leu Ser Asp Ala Asn Asn Val Gln Glu Arg Asp Lys Cys
        260                 265                 270
Leu Leu Gln Met Ser Thr Ser Leu Met His Thr Ala Gly Leu Asn Leu
        275                 280                 285
Gln Arg Pro Pro Val Pro Thr Pro Ser Gly Val Thr Ala His Pro Gln
        290                 295                 300
Pro Gln Pro Asp Pro Val Val Thr Ser Gln Pro Ser Leu Leu Gly Ala
305                 310                 315                 320
Arg Glu Arg Ser Pro Val Ser Ser Arg Gly Arg Phe Pro Val Val Leu
        325                 330                 335
Pro Leu Ser Val Ile Ser Pro Arg Ser His Pro Gly Arg Val Glu Arg
        340                 345                 350
Arg Asp Leu Glu Asp Glu Glu Glu Glu Val Met Phe
        355                 360

        <210> 407
        <211> 283
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 407
Asn Ile Gln Thr Ser His Ser Arg Val Leu Leu Lys Lys Phe Ser Lys
1               5                   10                  15
Glu Phe Thr Ile Arg Thr Tyr Arg Ser Leu Gly Phe Thr Asp Tyr Leu
                20                  25                  30
Gly Gly Cys Leu Thr Asn Pro Leu Gly Lys Phe Pro Ser Pro Gln Asn
        35                  40                  45
Pro Gln Val Val Thr Ile Ala Pro Ser Ser Thr Thr Pro Gln Ala Val
        50                  55                  60
Ser Ser Ala Val Gln Gly Phe Leu Gln Thr Gly Gly Ala Ala Ser Ser
65                  70                  75                  80
Thr Ala Thr Thr Thr Thr Ala Ser Gly Ala Ser Ala Leu Gly Leu Ser
                85                  90                  95
Pro Asp Gln Val Gln Ala Leu Leu Thr Asn Leu Leu Asn Val Gly Gln
        100                 105                 110
Pro Ser Val Gly Gln Pro Ser Thr Ser Ala Gly Thr Ser Gly Ala Ser
        115                 120                 125
Ser Ser Ser Ala Ser Met Gln Gln Gln Leu Leu Gln Leu Ile Leu Asp
        130                 135                 140
Lys Thr Thr Gly Ser Gly Gly Ser Ser Val Ser Ser Glu Gln Leu Gln
145                 150                 155                 160
Gln Leu Leu Ser Leu Val Ser Gln Met Thr Thr Ser Gln Gly Gly Ser
                165                 170                 175
Gly Gly Thr Gln Ala Gly Gln Ala Ala Ser Val Leu Leu Asn Leu Leu
        180                 185                 190
Ser Ala Thr Gly Ser Ala Ala Ala Asn Pro Leu Gly Thr Ala Ala Ser
        195                 200                 205
Leu Ala Gln Ile Ile Tyr Ala Ala Val Thr Ser Pro Gly Ala Lys Lys
        210                 215                 220
Thr Ser Glu Phe Cys Tyr Asn Tyr Cys Gly Glu Thr Cys Gln Gly Asn
225                 230                 235                 240
```

```
Cys Gly Cys Pro Thr Cys Gly Cys Pro Asp Gly Gln Cys Gly Cys Gly
            245             250             255
Gly Phe Gly Arg Phe Phe Cys Gly Val Trp Lys Asn Cys Cys Gly Ile
            260             265             270
Gly Glu Gly Ser Gln Glu Pro Ala Ile Pro Leu
            275             280
```

```
        <210> 408
        <211> 302
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 408
Gly Gly Phe Met Leu Lys Ile Asp Leu Thr Gly Lys Val Ala Phe Val
1               5               10              15
Ala Gly Ile Gly Asp Asp Gln Gly Tyr Gly Trp Gly Ile Ala Lys Leu
            20              25              30
Leu Ala Glu Ala Gly Ala Thr Ile Ile Val Gly Thr Trp Val Pro Ile
        35              40              45
Tyr Lys Ile Phe Ser Gln Ser Trp Glu Leu Gly Lys Phe Asn Glu Ser
    50              55              60
Arg Lys Leu Ser Asn Gly Thr Leu Leu Glu Ile Ala Lys Ile Tyr Pro
65              70              75              80
Met Asp Ala Ser Phe Asp Ser Pro Glu Asp Val Pro Glu Asp Ile Ala
                85              90              95
Glu Asn Lys Arg Tyr Lys Gly Ile Thr Gly Phe Thr Ile Ser Glu Val
            100             105             110
Ala Glu Gln Val Lys Lys Asp Phe Gly His Ile Asp Ile Leu Val His
        115             120             125
Ser Leu Ala Asn Ser Pro Glu Ile Ser Lys Ser Leu Leu Glu Thr Ser
        130             135             140
Arg Lys Gly Tyr Leu Ala Ala Leu Ser Ala Ser Ser Tyr Ser Phe Val
145             150             155             160
Ser Leu Leu Ser His Phe Gly Ser Ile Met Asn Arg Gly Gly Ser Thr
                165             170             175
Ile Ser Leu Thr Tyr Leu Ala Ser Met Arg Ala Val Pro Gly Tyr Gly
            180             185             190
Gly Gly Met Ser Ser Ala Lys Ala Ala Leu Glu Ser Asp Thr Lys Thr
            195             200             205
Leu Ala Trp Glu Ala Gly Arg Arg Trp Gly Ile Arg Val Asn Thr Ile
    210             215             220
Ser Ala Gly Pro Leu Ala Ser Arg Ala Gly Lys Ala Ile Gly Phe Ile
225             230             235             240
Glu Arg Met Val Asp Tyr Tyr Gln Glu Trp Ala Pro Ile Pro Glu Ala
            245             250             255
Met Asn Ala Glu Gln Val Gly Ala Val Ala Ala Phe Leu Ala Ser Pro
            260             265             270
Leu Ala Ser Ala Ile Thr Gly Glu Thr Leu Tyr Val Asp His Gly Ala
        275             280             285
Asn Val Met Gly Ile Gly Pro Glu Met Phe Pro Lys Asp Ser
    290             295             300
```

```
        <210> 409
        <211> 300
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 409
Asn Tyr Gly Asp Ala Met Glu Lys Leu Leu Val Thr Asp Ile Asp Gly
1               5               10              15
```

```
Thr Ile Thr His Gln Ser His His Leu Asp Lys Lys Val Tyr Glu Arg
            20              25              30
Leu Tyr Ala Leu His Gln Ala Gly Trp Lys Leu Phe Phe Leu Thr Gly
        35              40              45
Arg Tyr Tyr Lys Tyr Ala Ala Arg Leu Phe Ser Asp Phe Asp Ala Pro
    50              55              60
Tyr Leu Leu Gly Cys Gln Asn Gly Ala Ser Val Trp Ser Ser Thr Ser
65              70              75              80
Ser Asn Leu Leu Tyr Ser Lys Ser Leu Pro Ser Asp Leu Leu Cys Ile
            85              90              95
Leu Gln Asp Cys Met Glu Gly Ala Thr Ala Leu Phe Ser Val Glu Ser
            100             105             110
Gly Ala Pro Tyr Gly Asp His Tyr Tyr Arg Phe Ser Pro Thr Pro Ile
        115             120             125
Ala Gln Asp Leu His Glu Tyr Val Asp Pro Arg Tyr Phe Pro Asn Ala
    130             135             140
Lys Glu Arg Glu Ile Leu Phe Glu Thr Arg Ser Leu Lys Asp Asp Tyr
145             150             155             160
Ala Phe Pro Ser Phe Ala Ala Ala Lys Val Phe Gly Leu Arg Asp Glu
            165             170             175
Val Ile Arg Ile Gln Lys Glu Leu Glu Arg Gln Glu Ala Leu Thr Ser
            180             185             190
Val Ala Thr Met Thr Leu Met Arg Trp Pro Phe Asp Phe Arg Tyr Ala
            195             200             205
Ile Leu Phe Leu Thr Asp Lys Ser Val Ser Lys Gly Lys Ala Leu Asp
    210             215             220
Arg Val Val Asn Ile Leu Tyr Asp Gly Lys Lys Pro Phe Val Met Ala
225             230             235             240
Ser Gly Asp Asp Ala Asn Asp Leu Asp Leu Ile Glu Arg Gly Asp Phe
            245             250             255
Lys Ile Val Met Ser Ser Ala Pro Glu Glu Met His Val His Ala Asp
            260             265             270
Phe Leu Ala Pro Pro Ala Asp Lys Asn Gly Ile Leu Ser Ala Trp Glu
    275             280             285
Ala Gly Val Arg Tyr Tyr Asp Asp Leu Met Ser Leu
290             295             300
```

        <210> 410
        <211> 164
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 410

```
Ser Arg Val Leu His Met Phe Phe Asn Leu Phe Ser Leu Val Phe Lys
1               5               10              15
Leu Ser Asp Glu Leu Ala Leu Ala Glu Thr Ile Gln Glu Pro Ile Ser
            20              25              30
Val His Glu Met Phe Pro Gly Ser Met Lys Leu Glu Met Phe Lys Met
        35              40              45
Leu Gly Ser Leu Ile Leu Leu Leu Thr Ile Phe Gly Phe Gly Val Trp
    50              55              60
Ala Phe Lys Lys Phe Val Arg Ser Arg Ser His Gly Phe Gly Gly Ser
65              70              75              80
Ser Gln Ile Lys Ile Leu Glu Arg Arg Ser Leu Thr Pro Lys Thr Ser
            85              90              95
Ile Tyr Leu Ile Arg Val Val Asn Lys Thr Leu Val Ile Ala Glu Thr
            100             105             110
Pro Glu Lys Ile Thr Leu Leu Thr Glu Phe Pro Pro Asp Thr Asp Ile
        115             120             125
Asn His Leu Leu Gln Glu Asn Asn Lys Gln Ser Ser Ser Ser Ala Thr
    130             135             140
```

678

Ser Asp Phe Leu Ser Lys Ala Ile Gln Lys Ile Gln Lys Lys Gln Gln
145   150   155   160
Thr Asn Gln Asp

          <210> 411
          <211> 161
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 411
Met Thr Thr Trp Thr Leu Asn Gln Asn Asn Leu Thr Lys Phe Leu Lys
1   5   10   15
Ser Ser Asp Glu Glu Pro Phe Leu Glu Arg Glu Ser Gly Leu Thr Tyr
          20   25   30
Ile Asn Ile Gln Ala Asn Gly Asn Glu Leu Pro Leu Phe Phe Val Ile
          35   40   45
Arg Ser Glu Gly Glu Ile Leu Gln Leu Ile Cys Tyr Leu Pro Tyr Gln
          50   55   60
Leu His Glu Ser His Lys Ala Ser Thr Ala Arg Leu Leu His Leu Leu
65   70   75   80
Asn Arg Asp Ile Asp Ile Pro Gly Phe Gly Met Asp Glu Glu Gln Gly
          85   90   95
Leu Ile Phe Tyr Arg Leu Val Leu Pro Cys Leu Asn Gly Glu Ile His
          100   105   110
Asp Thr Leu Leu Arg Ile Tyr Ile Asp Thr Ile Lys Leu Val Cys Asp
          115   120   125
Ser Phe Ser His Ala Ile Gly Leu Ile Ser Ser Gly Asn Met Asn Leu
          130   135   140
Asp Glu Leu Arg Arg Gln Ala Leu Gln Glu Gln Gln Glu Lys Arg Asn
145   150   155   160
Glu

          <210> 412
          <211> 249
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 412
Asp Val Arg Leu Phe Lys Ser Asn Lys Lys Asn Val Met Ser Ser Gln
1   5   10   15
Thr Met Asp Val Leu Ile Phe Tyr Asp Thr Glu Thr Thr Gly Thr Gln
          20   25   30
Ile Glu Arg Asp Arg Ile Ile Glu Ile Ala Ala Tyr Asn Ser Val Thr
          35   40   45
Asp Glu Ser Phe Leu Thr Tyr Val Asn Pro Glu Ile Pro Ile Pro Asp
          50   55   60
Glu Ala Ser Lys Ile His Gly Ile Thr Thr Asp Ala Val Leu Ser Ala
65   70   75   80
Pro Lys Phe Pro Glu Ala Tyr Glu Gly Phe Arg Lys Phe Cys Gly Glu
          85   90   95
Asp Ser Ile Leu Val Ala His Asn Asn Asp Gly Phe Asp Phe Pro Leu
          100   105   110
Leu Gly Lys Glu Cys Arg Arg His Ser Leu Glu Pro Leu Thr Asn Arg
          115   120   125
Thr Ile Asp Ser Leu Lys Trp Ala Gln Lys Tyr Arg Pro Asp Leu Pro
          130   135   140
Lys His Asn Leu Gln Tyr Leu Arg Gln Val Tyr Gly Phe Ala Glu Asn
145   150   155   160

679

Gln Ala His Arg Ala Leu Asp Asp Val Val Ile Leu His Lys Val Phe
            165   170   175
Thr Ser Leu Ile Gly Asp Leu Pro Pro Gln Gln Val Leu Asp Leu Leu
            180   185   190
Gln Gln Ser Tyr His Pro Lys Val Phe Lys Met Pro Phe Gly Lys Tyr
        195   200   205
Lys Gly Gln Pro Leu Val Asp Ile Pro Lys Ser Tyr Phe Glu Trp Leu
    210   215   220
Glu Asn Gln Gly Ala Leu Asp Lys Pro Glu Asn Lys Asp Ile Lys Ala
225   230   235   240
Ala Ile Ala Leu Leu His Gln Pro Thr
                245

        <210> 413
        <211> 272
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 413
Arg His Gln Ser Arg Tyr Ser Ser Ile Thr Ser Thr Asp Met Ile Leu
1   5   10   15
Thr Ala Ala Phe Ser Pro Cys Pro Asn Asp Ile Phe Leu Phe Arg Ser
            20   25   30
Phe Leu Lys Asp Pro Gln Phe Arg Pro Leu Leu Asn Gln Val Thr Ile
        35   40   45
Ala Asp Ile Glu Thr Leu Asn Thr Leu Ala Leu Gln Arg Arg Leu Ser
    50   55   60
Leu Met Lys Met Ser Ala Ala Leu Phe Pro Leu Val Ser Asp Tyr Tyr
65   70   75   80
Asn Leu Met Asp Val Gly Asn Thr Leu Gly Tyr Asn Ser Gly Pro Ile
            85   90   95
Val Leu Ser Leu Asp Pro Glu Cys Ser Leu Asp Thr Leu Ala Thr Pro
            100   105   110
Gly Glu Met Thr Thr Ala His Ala Leu Cys Lys Leu Tyr Tyr Pro Lys
        115   120   125
Ala Lys Leu Ile Pro Met Pro Tyr Asp Lys Ile Leu Ser Ala Ile Leu
    130   135   140
Gln Gly Lys Val Asp Gly Gly Ala Leu Ile His Glu Glu Arg Phe Ser
145   150   155   160
Tyr Asp Leu Gln Leu Thr Leu Arg Ala Asp Phe Gly Glu Leu Trp Arg
            165   170   175
Arg Lys Thr Ile Phe Pro Leu Pro Leu Gly Cys Leu Ala Ile Ala Lys
            180   185   190
Tyr Val Pro Met Ala Thr Val Asp Ala Leu Thr Ala Ala Leu Arg Lys
        195   200   205
Ser Leu Ile Cys Ser Leu Lys Asp Pro Ile Thr Ala Gly Ala Lys Ala
    210   215   220
Val Glu Tyr Ser Lys Asn Lys Asn Val Thr Val Ile His Arg Phe Ile
225   230   235   240
Gly Thr Tyr Ile Asn Lys Glu Thr Phe Gln Leu Ser Lys Thr Gly Lys
            245   250   255
Lys Ala Leu His Met Leu Trp Lys Ala Asn Glu Cys Cys Gln Tyr Thr
            260   265   270

        <210> 414
        <211> 244
        <212> PRT
        <213> Chlamydia pneumoniae

                    680

<400> 414

Glu Pro Ile Ser Thr Lys Lys Pro Phe Asn Tyr Leu Lys Leu Gly Lys
1   5   10   15
Lys Leu Tyr Ile Cys Ser Gly Arg Pro Met Asn Ala Val Asn Thr Pro
            20   25   30
Lys Lys Ile Leu Cys Ile Val Ala Asp Tyr Arg Glu Ile Ser Pro Leu
            35   40   45
Ile Glu Gln Leu Asp Phe Thr Gln Ile Asn Glu His Leu Tyr Ser Tyr
    50   55   60
Arg Cys Thr Asp Tyr His Leu Asp Leu Tyr Ile Val His Val Trp Gly
65   70   75   80
Ser Thr Ala Val Leu Asn Ala Leu Gln Ser Tyr Cys Gln Ala Tyr Thr
            85   90   95
Asp Tyr Asp Leu Trp Ile Asn Pro Gly Phe Val Gly Ala Cys Ser Pro
            100   105   110
Glu Ile Pro Leu Gly Gln Cys Tyr Thr Ile Glu Lys Ile Ala Asn Leu
        115   120   125
Thr Thr Asp Thr Pro Pro Val Leu Ser Glu Asp Pro Pro Tyr Ile Phe
    130   135   140
Asp Ala Leu Pro Asp Ser Leu Pro Lys Ser Ser Leu Val Thr Ser Pro
145   150   155   160
Val Leu Tyr His Tyr Gly Phe His Lys Thr Phe Lys Leu Leu Asp Met
            165   170   175
Glu Gly Tyr Ala Ile Ala Ser Gln Ala Ala Glu His His Ile Pro Cys
            180   185   190
Ser Phe Leu Lys Ile Thr Ser Asp Tyr Thr Val Pro Gly Asp Cys Pro
            195   200   205
Phe Ser Arg Leu Glu Glu Val Ser Gln Lys Leu Thr Gln Thr Leu Val
    210   215   220
Glu Leu Leu Pro Glu Leu Met Glu Arg Ala Ile Pro Pro Lys Leu Leu
225   230   235   240
Leu Pro Cys Pro

        <210> 415
        <211> 661
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 415

Val Phe Met Lys Leu Leu Leu Lys Ala Val Leu Arg His Lys Asn His
1   5   10   15
Leu Val Ile Leu Gly Cys Ser Leu Leu Ala Ile Leu Gly Leu Thr Phe
             20   25   30
Ser Ser Gln Met Glu Ile Phe Ser Leu Gly Met Ile Ala Lys Thr Gly
        35   40   45
Pro Asp Ala Phe Leu Leu Phe Gly Arg Lys Glu Ser Gly Lys Leu Val
        50   55   60
Lys Val Ser Glu Leu Ser Gln Lys Asp Ile Leu Glu Asn Trp Gln Ala
65   70   75   80
Ile Ser Lys Asp Ser Glu Thr Leu Thr Val Ser Asp Ala Thr Thr Tyr
            85   90   95
Ile Ala Glu His Gly Lys Ser Thr Ala Ser Leu Thr Ser Lys Leu Ser
            100   105   110
Lys Phe Val Arg Asn Tyr Ile Asp Val Ser Arg Phe Arg Gly Leu Ala
        115   120   125
Ile Phe Leu Ile Cys Val Ala Ile Phe Lys Ala Val Thr Leu Phe Phe
    130   135   140
Gln Arg Phe Leu Gly Gln Val Val Ala Ile Arg Val Ser Arg Asp Leu
145   150   155   160

```
Arg Gln Asp Tyr Phe Lys Ala Leu Gln Gln Leu Pro Met Thr Phe Phe
            165              170            175
His Asp His Asp Ile Gly Asn Leu Ser Asn Arg Val Met Thr Asp Ser
            180              185            190
Ala Ser Ile Ala Leu Ala Val Asn Ser Leu Met Ile Asn Tyr Ile Gln
            195              200            205
Ala Pro Ile Thr Phe Ile Leu Thr Leu Gly Val Cys Leu Ser Ile Ser
210              215            220
Trp Lys Phe Ser Ile Leu Ile Cys Val Ala Phe Pro Ile Phe Ile Leu
225              230            235              240
Pro Ile Val Val Ile Ala Arg Lys Ile Lys Asn Leu Ala Lys Arg Ile
            245              250            255
Gln Lys Ser Gln Asp Ser Phe Ser Ser Val Leu Tyr Asp Phe Leu Ala
            260              265            270
Gly Val Met Thr Val Lys Val Phe Arg Thr Glu Lys Phe Ala Phe Thr
            275              280            285
Lys Tyr Cys Glu His Asn Asn Lys Ile Ser Ala Leu Glu Glu Lys Ser
            290              295            300
Ala Ala Tyr Gly Leu Leu Pro Arg Pro Leu Leu His Thr Ile Ala Ser
305              310            315              320
Leu Phe Phe Ala Phe Val Val Val Ile Gly Ile Tyr Lys Phe Ala Ile
            325              330            335
Pro Pro Glu Glu Leu Ile Val Phe Cys Gly Leu Leu Tyr Leu Ile Tyr
            340              345            350
Asp Pro Ile Lys Lys Phe Gly Asp Glu Asn Thr Ser Ile Met Arg Gly
            355              360            365
Cys Ala Ala Ala Glu Arg Phe Tyr Glu Val Leu Asn His Pro Asp Leu
            370              375            380
His Ser Gln Lys Glu Arg Glu Ile Glu Phe Leu Gly Leu Ser Asn Thr
385              390            395              400
Ile Thr Phe Glu Asn Val Ser Phe Gly Tyr Gln Glu Asp Lys His Ile
                  405              410            415
Leu Lys Asn Leu Ser Phe Thr Leu His Lys Gly Glu Ala Leu Gly Ile
            420              425            430
Val Gly Pro Thr Gly Ser Gly Lys Thr Thr Leu Val Lys Leu Leu Pro
            435              440            445
Arg Leu Tyr Glu Val Ser Gln Gly Lys Ile Leu Ile Asp Ser Leu Pro
450              455            460
Ile Thr Glu Tyr Asn Lys Gly Ser Leu Arg Asn His Ile Ala Cys Val
465              470            475              480
Leu Gln Asn Pro Phe Leu Phe Tyr Asp Thr Val Trp Asn Asn Leu Thr
            485              490            495
Cys Gly Lys Asp Met Glu Glu Glu Ala Val Leu Glu Ala Leu Lys Arg
            500              505            510
Ala Tyr Ala Asp Glu Phe Ile Leu Lys Leu Pro Lys Gly Val His Ser
            515              520            525
Val Leu Glu Glu Ser Gly Lys Asn Leu Ser Gly Gly Gln Gln Gln Arg
            530              535            540
Leu Ala Ile Ala Arg Ala Leu Leu Lys Asn Ala Ser Ile Leu Ile Leu
545              550            555              560
Asp Glu Ala Thr Ser Ala Leu Asp Ala Ile Ser Glu Asn Tyr Ile Lys
                  565              570            575
Asn Ile Ile Gly Glu Leu Lys Gly Gln Cys Thr Gln Ile Ile Ile Ala
                  580              585            590
His Lys Leu Thr Thr Leu Glu His Val Asp Arg Val Leu Tyr Ile Glu
            595              600            605
Asn Gly Gln Lys Ile Ala Glu Gly Thr Lys Glu Glu Leu Leu Gln Thr
            610              615            620
Cys Pro Glu Phe Leu Lys Met Trp Glu Leu Ser Gly Thr Lys Glu Tyr
625              630            635              640
```

682

```
Asn Arg Val Phe Val Pro Asp His Lys Leu Val Ala Asn Pro Thr Asp
                645             650                 655
Met Ala Ile Thr Thr
                660


        <210> 416
        <211> 344
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 416
Leu Cys Leu Arg Ile Val Cys Ile Lys Met Ile Leu Phe Ile Arg Gly
1               5                   10                  15
Glu His Ile Leu Met Glu Leu Leu Pro His Glu Lys Gln Val Val Glu
                20                  25                  30
Tyr Glu Lys Ala Ile Ala Glu Phe Lys Glu Lys Asn Lys Lys Asn Ser
            35                  40                  45
Leu Leu Ser Ser Ser Glu Ile Gln Lys Leu Glu Lys Arg Leu Asp Lys
        50                  55                  60
Leu Lys Glu Lys Ile Tyr Ser Asp Leu Thr Pro Trp Glu Arg Val Gln
65                  70                  75                  80
Ile Cys Arg His Pro Ser Arg Pro Arg Thr Val Asn Tyr Ile Glu Gly
                85                  90                  95
Met Cys Glu Glu Phe Val Glu Leu Cys Gly Asp Arg Thr Phe Arg Asp
            100                 105                 110
Asp Pro Ala Val Val Gly Gly Phe Val Lys Ile Gln Gly Gln Arg Phe
        115                 120                 125
Val Leu Ile Gly Gln Glu Lys Gly Cys Asp Thr Ala Ser Arg Leu His
        130                 135                 140
Arg Asn Phe Gly Met Leu Cys Pro Glu Gly Phe Arg Lys Ala Leu Arg
145                 150                 155                 160
Leu Gly Lys Leu Ala Glu Lys Phe Gly Leu Pro Val Val Phe Leu Val
                165                 170                 175
Asp Thr Pro Gly Ala Tyr Pro Gly Leu Thr Ala Glu Glu Arg Gly Gln
            180                 185                 190
Gly Trp Ala Ile Ala Lys Asn Leu Phe Glu Leu Ser Arg Leu Ala Thr
            195                 200                 205
Pro Val Ile Ile Val Val Ile Gly Glu Gly Cys Ser Gly Gly Ala Leu
        210                 215                 220
Gly Met Ala Val Gly Asp Ser Val Ala Met Leu Glu His Ser Tyr Tyr
225                 230                 235                 240
Ser Val Ile Ser Pro Glu Gly Cys Ala Ser Ile Leu Trp Lys Asp Pro
                245                 250                 255
Lys Lys Asn Ser Glu Ala Ala Ser Met Leu Lys Met His Gly Glu Asn
                260                 265                 270
Leu Lys Gln Phe Gly Ile Ile Asp Thr Val Ile Lys Glu Pro Ile Gly
            275                 280                 285
Gly Ala His His Asp Pro Ala Leu Val Tyr Ser Asn Val Arg Glu Phe
        290                 295                 300
Ile Ile Gln Glu Trp Leu Arg Leu Lys Asp Leu Ala Ile Glu Glu Leu
305                 310                 315                 320
Leu Glu Lys Arg Tyr Glu Lys Phe Arg Ser Ile Gly Leu Tyr Glu Thr
                325                 330                 335
Thr Ser Glu Ser Gly Pro Glu Ala
                340


        <210> 417
        <211> 434
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 417

Ser Gln Thr Gly Phe Leu Pro Gly Leu Thr Leu Ile Phe Val Ile Ile
1   5   10   15

Ile Val Trp Cys Asn Ala Phe Leu Ile Lys Leu Cys Val Ile Met Gly
            20   25   30

Leu Gln Ser Arg Leu Gln His Cys Ile Glu Val Ser Gln Asn Ser Asn
        35   40   45

Phe Asp Ser Gln Val Lys Gln Phe Ile Tyr Ala Cys Gln Asp Lys Thr
    50   55   60

Leu Arg Gln Ser Val Leu Lys Ile Phe Arg Tyr His Pro Leu Leu Lys
65   70   75   80

Ile His Asp Ile Ala Arg Ala Val Tyr Leu Leu Met Ala Leu Glu Glu
            85   90   95

Gly Glu Asp Leu Gly Leu Ser Phe Leu Asn Val Gln Gln Tyr Pro Ser
            100   105   110

Gly Ala Val Glu Leu Phe Ser Cys Gly Gly Phe Pro Trp Lys Gly Leu
        115   120   125

Pro Tyr Pro Ala Glu His Ala Glu Phe Gly Leu Leu Leu Leu Gln Ile
    130   135   140

Ala Glu Phe Tyr Glu Glu Ser Gln Ala Tyr Val Ser Lys Met Ser His
145   150   155   160

Phe Gln Gln Ala Leu Phe Asp His Gln Gly Ser Val Phe Pro Ser Leu
            165   170   175

Trp Ser Gln Glu Asn Ser Arg Leu Leu Lys Glu Lys Thr Thr Leu Ser
            180   185   190

Gln Ser Phe Leu Phe Gln Leu Gly Met Gln Ile His Pro Glu Tyr Ser
    195   200   205

Leu Glu Asp Pro Ala Leu Gly Phe Trp Met Gln Arg Thr Arg Ser Ser
210   215   220

Ser Ala Phe Val Ala Ala Ser Gly Cys Gln Ser Ser Leu Gly Ala Tyr
225   230   235   240

Ser Ser Gly Asp Val Gly Val Ile Ala Tyr Gly Pro Cys Ser Gly Asp
            245   250   255

Ile Ser Asp Cys Tyr Tyr Phe Gly Cys Cys Gly Ile Ala Lys Glu Phe
            260   265   270

Val Cys Gln Lys Ser His Gln Thr Thr Glu Ile Ser Phe Leu Thr Ser
    275   280   285

Thr Gly Lys Pro His Pro Arg Asn Thr Gly Phe Ser Tyr Leu Arg Asp
    290   295   300

Ser Tyr Val His Leu Pro Ile Arg Cys Lys Ile Thr Ile Ser Asp Lys
305   310   315   320

Gln Tyr Arg Val His Ala Ala Leu Ala Glu Ala Thr Ser Ala Met Thr
            325   330   335

Phe Ser Ile Phe Cys Lys Gly Lys Asn Cys Gln Val Val Asp Gly Pro
            340   345   350

Arg Leu Arg Ser Cys Ser Leu Asp Ser Tyr Lys Gly Pro Gly Asn Asp
        355   360   365

Ile Met Ile Leu Gly Glu Asn Asp Ala Ile Asn Ile Val Ser Ala Ser
    370   375   380

Pro Tyr Met Glu Ile Phe Ala Leu Gln Gly Lys Glu Lys Phe Trp Asn
385   390   395   400

Ala Asp Phe Leu Ile Asn Ile Pro Tyr Lys Glu Glu Gly Val Met Leu
            405   410   415

Ile Phe Glu Lys Lys Val Thr Ser Glu Lys Gly Arg Phe Phe Thr Lys
        420   425   430

Met Asn

<210> 418
<211> 105
<212> PRT
<213> Chlamydia pneumoniae

<400> 418
Glu Ala Leu Ser Asn Met Ala Thr Met Thr Lys Lys Lys Leu Ile Ser
1   5   10   15
Thr Ile Ser Gln Asp His Lys Ile His Pro Asn His Val Arg Thr Val
            20   25   30
Ile Gln Asn Phe Leu Asp Lys Met Thr Asp Ala Leu Val Lys Gly Asp
        35   40   45
Arg Leu Glu Phe Arg Asp Phe Gly Val Leu Gln Val Val Glu Arg Lys
    50   55   60
Pro Lys Val Gly Arg Asn Pro Lys Asn Ala Ala Val Pro Ile His Ile
65   70   75   80
Pro Ala Arg Arg Ala Val Lys Phe Thr Pro Gly Lys Arg Met Lys Arg
                85   90   95
Leu Ile Glu Thr Pro Asn Lys His Ser
            100   105

<210> 419
<211> 268
<212> PRT
<213> Chlamydia pneumoniae

<400> 419
Arg Glu Lys Gly Met Lys Leu Thr Lys Tyr Leu Asn Thr Lys Gln Leu
1   5   10   15
Arg Ser Met Ile Ser Arg Leu Phe Val Arg Tyr Ser Leu Pro Met Ser
            20   25   30
Lys Gln Leu Ser Phe Phe Ala Leu Cys Val Leu Gly Ser His Pro Ile
        35   40   45
Phe Ala Gln Thr Pro Asn Pro Pro Gln Arg Val Arg Arg Ser Glu Val
    50   55   60
Ile Phe Ile Asp Pro Gly His Gly Gly Lys Asp Gln Gly Thr Ala Ser
65   70   75   80
Lys Glu Leu His Tyr Glu Glu Lys Ser Leu Thr Leu Ser Leu Ala Leu
                85   90   95
Thr Val Gln Ser Tyr Leu Lys Arg Met Gly Tyr Lys Pro Gln Leu Thr
            100   105   110
Arg Ser Ser Asp Val Tyr Val Asp Leu Gly Lys Arg Val Ala Leu Ser
        115   120   125
Asn Arg Gly Gln Gly Asp Val Phe Ile Ser Ile His Cys Asn His Ser
    130   135   140
Ser Asn Ala Ala Ala Phe Gly Thr Glu Val Tyr Phe Tyr Asn Gly Lys
145   150   155   160
Val Gly Ser Pro Thr Arg Asn Arg Met Ser Glu Val Leu Gly Lys Asn
                165   170   175
Ile Leu Ala Ala Met Glu Lys Asn Gly Ile Leu Lys Ser Arg Gly Leu
            180   185   190
Lys Thr Ala Asn Phe Val Val Ile Arg Asp Thr Ser Met Pro Ala Val
        195   200   205
Leu Val Glu Thr Gly Phe Leu Ser Asn Ser Arg Glu Arg Ala Ala Leu
    210   215   220
Gln Asp Ala Arg Tyr Arg Met His Val Ala Lys Gly Ile Ala Glu Gly
225   230   235   240
Val His Asn Phe Leu Ser Gly Pro Ser Phe Gln Lys Pro Lys Gln Asn
                245   250   255
Ile Ala Lys Ile Arg Lys Pro Gln Ile Gln Ala Asn
            260   265

685

<210> 420
<211> 483
<212> PRT
<213> Chlamydia pneumoniae

<400> 420

```
Met Asp Leu Lys Glu Leu Leu His Gly Val Gln Ala Lys Ile Tyr Gly
1               5                  10                 15
Lys Val Arg Pro Leu Glu Val Arg Asn Leu Thr Arg Asp Ser Arg Cys
            20                 25                 30
Val Ser Val Gly Asp Ile Phe Ile Ala His Lys Gly Gln Arg Tyr Asp
        35                 40                 45
Gly Asn Asp Phe Ala Val Asp Ala Leu Ala Asn Gly Ala Ile Ala Ile
    50                 55                 60
Ala Ser Ser Leu Tyr Asn Pro Phe Leu Ser Val Gln Ile Ile Thr
65                 70                 75                 80
Pro Asn Leu Glu Glu Leu Glu Ala Glu Leu Ser Ala Lys Tyr Tyr Glu
                85                 90                 95
Tyr Pro Ser Ser Lys Leu His Thr Ile Gly Val Thr Gly Thr Asn Gly
            100                105                110
Lys Thr Thr Val Thr Cys Leu Ile Lys Ala Leu Leu Asp Ser Tyr Gln
        115                120                125
Lys Pro Ser Gly Leu Leu Gly Thr Ile Glu His Ile Leu Gly Glu Gly
    130                135                140
Val Ile Lys Asp Gly Phe Thr Thr Pro Thr Pro Ala Leu Leu Gln Lys
145                150                155                160
Tyr Leu Ala Thr Met Val Arg Gln Asn Arg Asp Ala Val Val Met Glu
            165                170                175
Val Ser Ser Ile Gly Leu Ala Ser Gly Arg Val Ala Tyr Thr Asn Phe
        180                185                190
Asp Thr Ala Val Leu Thr Asn Ile Thr Leu Asp His Leu Asp Phe His
    195                200                205
Gly Thr Phe Glu Thr Tyr Val Ala Ala Lys Ala Lys Leu Phe Ser Leu
    210                215                220
Val Pro Pro Ser Gly Met Val Val Ile Asn Thr Asp Ser Pro Tyr Ala
225                230                235                240
Ser Gln Cys Ile Glu Ser Ala Lys Ala Pro Val Ile Thr Tyr Gly Ile
            245                250                255
Glu Ser Ala Ala Asp Tyr Arg Ala Thr Asp Ile Gln Leu Ser Ser Ser
            260                265                270
Gly Thr Lys Tyr Thr Leu Val Tyr Gly Asp Gln Lys Ile Ala Cys Ser
        275                280                285
Ser Ser Phe Ile Gly Lys Tyr Asn Val Tyr Asn Leu Leu Ala Ala Ile
    290                295                300
Ser Thr Val His Ala Ser Leu Arg Cys Asp Leu Glu Asp Leu Leu Glu
305                310                315                320
Lys Ile Gly Leu Cys Gln Pro Pro Gly Arg Leu Asp Pro Val Leu
            325                330                335
Met Gly Pro Cys Pro Val Tyr Ile Asp Tyr Ala His Thr Pro Asp Ala
            340                345                350
Leu Asp Asn Val Leu Thr Gly Leu His Glu Leu Leu Pro Glu Gly Gly
    355                360                365
Arg Leu Ile Val Val Phe Gly Cys Gly Gly Asp Arg Asp Arg Ser Lys
    370                375                380
Arg Lys Leu Met Ala Gln Val Val Glu Arg Tyr Gly Phe Ala Val Val
385                390                395                400
Thr Ser Asp Asn Pro Arg Ser Glu Pro Pro Glu Asp Ile Val Asn Glu
            405                410                415
Ile Cys Asp Gly Phe Tyr Ser Lys Asn Tyr Phe Ile Glu Ile Asp Arg
            420                425                430
```

686

```
Lys Gln Ala Ile Thr Tyr Ala Leu Ser Ile Ala Ser Asp Arg Asp Ile
        435                 440                 445
Val Leu Ile Ala Gly Lys Gly His Glu Ala Tyr Gln Ile Phe Lys His
    450                 455                 460
Gln Thr Val Ala Phe Asp Asp Lys Gln Thr Val Cys Glu Val Leu Ala
465                 470                 475                 480
Ser Tyr Val


        <210> 421
        <211> 674
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 421
Gln Leu Phe Pro Asn Thr Asn Ile Trp Asn Ile Pro Gln Lys Lys Val
1                 5                 10                 15
Ser Val Phe Tyr Pro Met Ser Tyr Arg Lys Arg Ser Thr Leu Ile Val
            20                 25                 30
Leu Gly Val Phe Ala Leu Tyr Ala Leu Leu Val Leu Arg Tyr Tyr Lys
        35                 40                 45
Ile Gln Ile Cys Glu Gly Asp His Trp Ala Ala Glu Ala Leu Gly Gln
    50                 55                 60
His Glu Phe Cys Val Arg Asp Pro Phe Arg Arg Gly Thr Phe Phe Ala
65                 70                 75                 80
Asn Thr Thr Val Arg Lys Gly Asp Lys Asp Leu Gln Gln Pro Phe Ala
            85                 90                 95
Val Asp Ile Thr Lys Phe His Leu Cys Ala Asp Pro Leu Ala Ile Pro
            100                 105                 110
Glu Cys His Arg Asp Glu Ile Ile Gln Gly Ile Leu Gln Phe Ile Glu
        115                 120                 125
Gly Gln Thr Tyr Asp Asp Leu Ser Leu Lys Leu Asp Lys Lys Ser Arg
    130                 135                 140
Tyr Cys Lys Leu Tyr Pro Leu Leu Asp Val Ser Val His Asp Arg Leu
145                 150                 155                 160
Ser Leu Trp Trp Lys Gly Tyr Ala Thr Lys His Arg Leu Pro Thr Asn
            165                 170                 175
Ala Leu Phe Phe Ile Thr Asp Tyr Gln Arg Ser Tyr Pro Phe Gly Lys
            180                 185                 190
Leu Leu Gly Gln Val Leu His Thr Leu Arg Glu Ile Lys Asp Glu Lys
        195                 200                 205
Thr Gly Lys Ala Phe Pro Thr Gly Gly Met Glu Ala Tyr Phe Asn His
    210                 215                 220
Ile Leu Glu Gly Asp Val Gly Glu Arg Lys Leu Leu Arg Ser Pro Leu
225                 230                 235                 240
Asn Arg Leu Asp Thr Asn Arg Val Ile Lys Leu Pro Lys Asp Gly Ser
            245                 250                 255
Asp Ile Tyr Leu Thr Ile Asn Pro Val Ile Gln Thr Ile Ala Glu Glu
            260                 265                 270
Glu Leu Glu Arg Gly Val Leu Glu Ala Lys Ala Gln Gly Gly Arg Leu
        275                 280                 285
Ile Leu Met Asn Ser Gln Thr Gly Glu Ile Leu Ala Leu Ala Gln Tyr
    290                 295                 300
Pro Phe Phe Asp Pro Thr Asn Tyr Lys Glu Tyr Phe Asn Asn Lys Glu
305                 310                 315                 320
Arg Ile Glu His Thr Lys Val Ser Phe Val Ser Asp Val Phe Glu Pro
            325                 330                 335
Gly Ser Ile Met Lys Pro Leu Thr Val Ala Ile Ala Leu Gln Ala Asn
            340                 345                 350
Glu Glu Ala Ser Leu Lys Ser Gln Lys Lys Ile Phe Asp Pro Glu Glu
        355                 360                 365
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687

Pro Ile Asp Val Thr Arg Thr Leu Phe Pro Gly Arg Lys Gly Ser Pro
    370   375   380
Leu Lys Asp Ile Ser Arg Asn Ser Gln Leu Asn Met Tyr Met Ala Ile
385   390   395   400
Gln Lys Ser Ser Asn Val Tyr Val Ala Gln Leu Ala Asp Arg Ile Ile
                405   410   415
Gln Ser Leu Gly Val Ala Trp Tyr Gln Gln Lys Leu Leu Ala Leu Gly
                420   425   430
Phe Gly Arg Lys Thr Gly Ile Glu Leu Pro Ser Glu Ala Ser Gly Leu
        435   440   445
Val Pro Ser Pro His Arg Phe His Ile Asn Gly Ser Leu Glu Trp Ser
    450   455   460
Leu Ser Thr Pro Tyr Ser Leu Ala Met Gly Tyr Asn Ile Leu Ala Thr
465   470   475   480
Gly Ile Gln Met Val Gln Ala Tyr Ala Ile Leu Ala Asn Gly Gly Tyr
                485   490   495
Ala Val Arg Pro Thr Leu Val Lys Lys Ile Val Ser Ala Ser Gly Glu
                500   505   510
Glu Tyr His Leu Pro Thr Lys Glu Lys Thr Arg Leu Phe Ser Glu Glu
        515   520   525
Ile Thr Arg Glu Val Val Arg Ala Met Arg Phe Thr Thr Leu Pro Gly
    530   535   540
Gly Ser Gly Phe Arg Ala Ser Pro Lys His His Ser Ser Ala Gly Lys
545   550   555   560
Thr Gly Thr Thr Glu Lys Met Ile His Gly Lys Tyr Asp Lys Arg Arg
                565   570   575
His Ile Ala Ser Phe Ile Gly Phe Thr Pro Val Glu Ser Ser Glu Gly
                580   585   590
Asn Phe Pro Pro Leu Val Met Leu Val Ser Ile Asp Asp Pro Glu Tyr
        595   600   605
Gly Leu Arg Ala Asp Gly Thr Lys Asn Tyr Met Gly Gly Arg Cys Ala
    610   615   620
Ala Pro Ile Phe Ser Arg Val Ala Asp Arg Thr Leu Leu Tyr Leu Gly
625   630   635   640
Ile Leu Pro Asp Lys Lys Leu Arg Asn Cys Asp Glu Glu Ala Ala Ala
                645   650   655
Leu Lys Arg Leu Tyr Glu Glu Trp Asn Arg Ser Pro Lys Gln Gly Gly
        660   665   670
Thr Arg

        <210> 422
        <211> 99
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 422
Lys Ser Phe Pro Met Asn Lys Ser Arg Phe Leu Arg Leu Cys Cys Cys
1   5   10   15
Leu Cys Phe Cys Gly Ser Leu Phe Tyr Phe Tyr Ile Asn Lys Gln Asn
                20   25   30
Ser Leu Thr Lys Leu Arg Leu Glu Ile Pro Cys Leu Ser Val Arg Leu
        35   40   45
Arg Gln Leu Glu Gln Gln Asn Ile Ser Leu Arg Phe Leu Ile Asp Lys
    50   55   60
Ile Glu Arg Pro Asp His Leu Met Glu Ile Ala Ala Leu Pro Glu Tyr
65   70   75   80
Gln Tyr Leu Glu Tyr Pro Ser Glu Glu Ser Ile Ser Leu Leu Ser Tyr
                85   90   95
Glu Leu Pro

<210> 423
<211> 300
<212> PRT
<213> Chlamydia pneumoniae

<400> 423
Glu Ile Leu Met Ser Glu Arg Ala His Ile Pro Val Leu Val Glu Glu
1   5   10   15
Cys Leu Ala Leu Phe Ala Gln Arg Pro Pro Gln Thr Phe Arg Asp Val
            20   25   30
Thr Leu Gly Ala Gly Gly His Ala Tyr Ala Phe Leu Glu Ala Tyr Pro
        35   40   45
Ser Leu Thr Cys Tyr Asp Gly Ser Asp Arg Asp Leu Gln Ala Leu Ala
        50   55   60
Ile Ala Glu Lys Arg Leu Glu Thr Phe Gln Asp Arg Val Ser Phe Ser
65   70   75   80
His Ala Ser Phe Glu Asp Leu Ala Asn Gln Pro Thr Pro Arg Leu Tyr
                85   90   95
Asp Gly Val Leu Ala Asp Leu Gly Val Ser Ser Met Gln Leu Asp Thr
            100   105   110
Leu Ser Arg Gly Phe Ser Phe Gln Gly Glu Lys Glu Glu Leu Asp Met
        115   120   125
Arg Met Asp Gln Thr Gln Glu Leu Ser Ala Ser Asp Val Leu Asn Ser
    130   135   140
Leu Lys Glu Glu Glu Leu Gly Arg Ile Phe Arg Glu Tyr Gly Glu Glu
145   150   155   160
Pro Gln Trp Lys Ser Ala Ala Lys Ala Val Val His Phe Arg Lys His
                165   170   175
Lys Lys Ile Leu Ser Ile Gln Asp Val Lys Glu Ala Leu Leu Gly Val
                180   185   190
Phe Pro His Tyr Arg Phe His Arg Lys Ile His Pro Leu Thr Leu Ile
            195   200   205
Phe Gln Ala Leu Arg Val Tyr Val Asn Gly Glu Asp Arg Gln Leu Lys
    210   215   220
Ser Leu Leu Thr Ser Ala Ile Ser Trp Leu Ala Pro Gln Gly Arg Leu
225   230   235   240
Val Ile Ile Ser Phe Cys Ser Ser Glu Asp Arg Pro Val Lys Trp Phe
                245   250   255
Phe Lys Glu Ala Glu Ala Ser Gly Leu Gly Lys Val Ile Thr Lys Lys
                260   265   270
Val Ile Gln Pro Thr Tyr Gln Glu Val Arg Arg Asn Pro Arg Ser Arg
    275   280   285
Ser Ala Lys Leu Arg Cys Phe Glu Lys Ala Ser Gln
290   295   300

<210> 424
<211> 184
<212> PRT
<213> Chlamydia pneumoniae

<400> 424
Gly Leu Ala Met Val Glu Ile Phe Asn Tyr Ser Thr Ser Ile Tyr Glu
1   5   10   15
Gln His Ala Ser Asn Asn Arg Ile Val Ser Asp Phe Arg Lys Glu Ile
            20   25   30
Gln Met Glu Gly Ile Ser Ile Arg Asp Val Ala Lys His Ala Gln Ile
        35   40   45
Leu Asp Met Asn Pro Lys Pro Ser Ala Leu Thr Ser Leu Leu Gln Thr
        50   55   60
Asn Gln Lys Ser His Trp Ala Cys Phe Ser Pro Pro Asn Asn Phe Tyr
65   70   75   80

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```
Lys Gln Arg Phe Ser Thr Pro Tyr Leu Ala Pro Ser Leu Gly Ser Pro
                85              90              95
Asp Gln Gln Asp Glu Asp Ile Glu Lys Ile Ser Ser Phe Leu Lys Val
            100             105             110
Leu Thr Arg Gly Lys Phe Ser Tyr Arg Ser Gln Ile Thr Pro Phe Leu
        115             120             125
Ser Tyr Lys Asp Lys Glu Glu Glu Glu Asp Glu Asp Pro Glu Glu Asp
        130             135             140
Asp Asp Asp Pro Arg Val Gln Gln Gly Lys Val Leu Leu Lys Ala Leu
145             150             155             160
Asp Leu Gly Val Lys Ser Thr Asn Val Met Ile Asp Tyr Val Ile Ser
            165             170             175
Arg Ile Phe Gln Phe Val Gln Gly
            180


        <210> 425
        <211> 143
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 425
Cys Met Leu Asp Asn Glu Trp Lys Ala Ile Leu Gly Trp Gly Asp Asp
1               5               10              15
Glu Leu Glu Glu Leu Arg Ile Ser Gly Tyr Ser Phe Leu Arg Gln Gly
            20              25              30
His Tyr Ser Lys Ala Ile Leu Phe Phe Glu Ala Leu Val Ile Leu Asp
        35              40              45
Pro Leu Ser Ile Tyr Asp His Gln Thr Leu Gly Gly Leu Tyr Leu Gln
    50              55              60
Ile Gly Glu Asn Ser Gln Ala Leu Ala Val Leu Asp Gln Ala Leu Arg
65              70              75              80
Met Gln Gly Asp His Leu Pro Thr Leu Leu Asn Lys Thr Lys Ala Leu
            85              90              95
Phe Cys Leu Gly Arg Ile Glu Glu Ala Thr Ala Ile Ala Thr Tyr Leu
            100             105             110
Ser Ser Cys Pro Ile Pro Ala Ile Ala Asn Asp Ala Glu Ala Leu Leu
        115             120             125
Met Ser Tyr Ser Lys Ala Thr Lys Lys Asn Ala Ala Leu Val Arg
    130             135             140


        <210> 426
        <211> 479
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 426
Ser Arg Cys Asn Glu Ile Phe Ser Pro Ser Leu Met Gly Trp Val Asp
1               5               10              15
Cys Ile Trp Trp Glu Ser Phe Ile Asn Phe Glu Ser Gly Met Leu Thr
            20              25              30
Cys Asn Glu Cys Thr Thr Trp Glu Gln Phe Leu Asn Tyr Val Lys Thr
     35              40              45
Arg Cys Ser Lys Thr Ala Phe Glu Asn Trp Ile Ser Pro Ile Gln Val
    50              55              60
Leu Glu Glu Thr Gln Glu Lys Ile Arg Leu Glu Val Pro Asn Ile Phe
65              70              75              80
Val Gln Asn Tyr Leu Leu Asp Asn Tyr Lys Arg Asp Leu Cys Ser Phe
            85              90              95
Val Pro Leu Asp Val His Gly Glu Pro Ala Leu Glu Phe Val Val Ala
            100             105             110
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Glu His Lys Lys Pro Ser Ala Pro Val Ala Ser Gln Lys Glu Ser Asn
          115   120   125
Glu Gly Ile Ser Glu Val Phe Glu Glu Thr Lys Asp Phe Glu Leu Lys
          130   135   140
Leu Asn Leu Ser Tyr Arg Phe Asp Asn Phe Ile Glu Gly Pro Ser Asn
145   150   155   160
Gln Phe Val Lys Ser Ala Ala Val Gly Ile Ala Gly Lys Pro Gly Arg
                165   170   175
Ser Tyr Asn Pro Leu Phe Ile His Gly Gly Val Gly Leu Gly Lys Thr
                180   185   190
His Leu Leu His Ala Val Gly His Tyr Val Arg Glu His His Lys Asn
          195   200   205
Leu Arg Ile His Cys Ile Thr Thr Glu Ala Phe Ile Asn Asp Leu Val
          210   215 ·   220
Tyr His Leu Lys Ser Lys Ser Val Asp Lys Met Lys Asn Phe Tyr Arg
225   230   235   240
Ser Leu Asp Leu Leu Leu Val Asp Asp Ile Gln Phe Leu Gln Asn Arg
                245   250   255
Gln Asn Phe Glu Glu Glu Phe Cys Asn Thr Phe Glu Thr Leu Ile Asn
                260   265   270
Leu Ser Lys Gln Ile Val Ile Thr Ser Asp Lys Pro Pro Ser Gln Leu
          275   280   285
Lys Leu Ser Glu Arg Ile Ile Ala Arg Met Glu Trp Gly Leu Val Ala
          290   295   300
His Val Gly Ile Pro Asp Leu Glu Thr Arg Val Ala Ile Leu Gln His
305   310   315   320
Lys Ala Glu Gln Lys Gly Leu Leu Ile Pro Asn Glu Met Ala Phe Tyr
                325   330   335
Ile Ala Asp His Ile Tyr Gly Asn Val Arg Gln Leu Glu Gly Ala Ile
          340   345   350
Asn Lys Leu Thr Ala Tyr Cys Arg Leu Phe Gly Lys Ser Leu Thr Glu
          355   360   365
Thr Thr Val Arg Glu Thr Leu Lys Glu Leu Phe Arg Ser Pro Thr Lys
          370   375   380 ·
Gln Lys Ile Ser Val Glu Thr Ile Leu Lys Ser Val Ala Thr Val Phe
385   390   395   400
Gln Val Lys Leu Asn Asp Leu Lys Gly Asn Ser Arg Ser Lys Asp Leu
                405   410   415
Val Leu Ala Arg Gln Ile Ala Met Tyr Leu Ala Lys Thr Leu Ile Thr
                420   425   430
Asp Ser Leu Val Ala Ile Gly Ala Ala Phe Gly Lys Thr His Ser Thr
          435   440   445
Val Leu Tyr Ala Cys Lys Thr Ile Glu His Lys Leu Gln Asn Asp Glu
          450   455   460
Thr Leu Lys Arg Gln Val Asn Leu Cys Lys Asn His Ile Val Gly
465   470   475

          <210> 427
          <211> 200
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 427
Phe Arg Gly Cys Pro Met Phe Arg Arg Thr Gly Lys Gly Pro Phe Glu
  1   5   10   15
Asp Val Gln Thr Leu Tyr Glu Glu Glu Thr Ser Ser Pro Ser Ser Tyr
                20   25   30
Ser Pro Tyr Ser Arg Ser Glu Arg Pro Glu Thr Pro Pro Ser Leu Phe
                35   40   45
Asp Asn Pro Lys Ala Ser Glu Ala Arg Pro Leu Asn His Asn Leu Thr
          50   55   60

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```
Glu Glu Ser Ser Leu Pro Gln Trp Ser Ser Thr Pro Arg Thr Glu Ser
65              70                  75                  80
Leu Leu Pro Leu Glu Pro Glu Thr Thr Leu Gly Glu Gly Val Thr
            85                  90                  95
Phe Lys Gly Glu Leu Ala Phe Glu Arg Leu Leu Arg Ile Asp Gly Thr
        100                 105                 110
Phe Glu Gly Ile Leu Val Ser Lys Gly Lys Ile Ile Ile Gly Pro Lys
    115                 120                 125
Gly Val Val Lys Ala Asp Ile Gln Leu Gln Glu Ala Ile Ile Glu Gly
    130                 135                 140
Val Val Glu Gly Asn Ile Thr Val Ser Gly Lys Val Glu Leu Arg Gly
145                 150                 155                 160
Gly Ala Ile Ile Lys Gly Asp Ile Gln Ala Asn Thr Leu Cys Val Asp
            165                 170                 175
Glu Gly Val Arg Ile Leu Gly Tyr Leu Ala Ile Ala Gly Ile Thr Asp
            180                 185                 190
His Ser Glu Arg Glu Arg Asp Leu
        195                 200


        <210> 428
        <211> 192
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 428
Met Val Leu Phe Ser Leu Leu Phe Pro Lys Leu Cys Tyr Gly Cys Gln
1               5               10                  15
Ala Pro Gly Ala Tyr Phe Cys Ser Asn Cys Leu Glu Lys Leu Leu Val
            20                  25                  30
Glu Asp Arg Glu Gly Arg Cys Leu His Cys Phe Arg Tyr Leu Gly Ser
        35                  40                  45
Ser Glu Thr Arg Leu Cys Ser Gln Cys Ser Pro Ser Ser Gln Leu Gln
    50                  55                  60
Ala Phe Ser Leu Tyr Leu Pro Ser Gln Thr Ala Leu Ser Val Tyr Ala
65              70                  75                  80
Arg Ala Cys Glu Gly Lys Arg Pro Ala Leu Gln Phe Phe Ser Lys Ser
            85                  90                  95
Ile Ala Phe Glu Leu Ala Ser Leu Asp Glu Thr Pro Ser Cys Ile Ala
        100                 105                 110
Tyr Ile Thr Ser Thr Ile Ser Arg Lys Ile Val Val Glu Val Ala Lys
    115                 120                 125
Leu Glu Lys Leu Leu Arg Ile Pro Leu Trp Pro Trp Leu Pro Lys Lys
    130                 135                 140
Arg Gln Ile Glu Lys Leu Pro Lys Gly Glu Gly Ile Cys Phe Leu Ser
145                 150                 155                 160
Ala Tyr Pro Leu Ser Gln Lys Trp Met Gln Thr Ile Val Gly Gly Ser
            165                 170                 175
Ala Ser Pro Leu Val Ser Ile Ser Leu Phe Leu Ser Gln Asn Asp Gln
            180                 185                 190


        <210> 429
        <211> 521
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 429
Ala Val Cys Tyr Val Phe Glu Arg Val Glu Ala Ser Thr Phe Leu Ser
1               5               10                  15
Ile Thr Met Leu Lys Lys Phe Ile Asn Ser Leu Trp Lys Leu Cys Gln
            20                  25                  30
```

692

```
Gln Asp Lys Tyr Gln Arg Phe Thr Pro Ile Val Asp Ala Ile Asp Thr
        35                  40                  45
Phe Cys Tyr Glu Pro Ile Glu Thr Pro Ser Lys Pro Phe Ile Arg
    50                  55                  60
Asp Ser Val Asp Val Lys Arg Trp Met Met Leu Val Val Ile Ala Leu
65                  70                  75                  80
Phe Pro Ala Thr Phe Val Ala Ile Trp Asn Ser Gly Leu Gln Ser Ile
            85                  90                  95
Val Tyr Ser Ser Gly Asn Pro Val Leu Met Glu Gln Phe Leu His Ile
        100                 105                 110
Ser Gly Phe Gly Ser Tyr Leu Ser Phe Val Tyr Lys Glu Ile His Ile
        115                 120                 125
Val Pro Ile Leu Trp Glu Gly Leu Lys Ile Phe Ile Pro Leu Leu Thr
    130                 135                 140
Ile Ser Tyr Val Val Gly Gly Thr Cys Glu Val Leu Phe Ala Val Val
145                 150                 155                 160
Arg Gly His Lys Ile Ala Glu Gly Leu Leu Val Thr Gly Ile Leu Tyr
            165                 170                 175
Pro Leu Thr Leu Pro Pro Thr Ile Pro Tyr Trp Met Ala Ala Leu Gly
        180                 185                 190
Ile Ala Phe Gly Ile Val Val Ser Lys Glu Leu Phe Gly Gly Thr Gly
        195                 200                 205
Met Asn Ile Leu Asn Pro Ala Leu Ser Gly Arg Ala Phe Leu Phe Phe
    210                 215                 220
Thr Phe Pro Ala Lys Met Ser Gly Asp Val Trp Val Gly Ser Asn Pro
225                 230                 235                 240
Gly Val Ile Lys Asp Ser Leu Met Lys Met Asn Ser Ser Thr Gly Lys
            245                 250                 255
Val Leu Ile Asp Gly Phe Ser Gln Ser Thr Cys Leu Gln Thr Leu Asn
            260                 265                 270
Ser Thr Pro Pro Ser Val Lys Arg Leu His Val Asp Ala Ile Ala Ala
        275                 280                 285
Asn Met Leu His Ile Pro His Val Pro Thr Gln Asp Val Ile His Ser
    290                 295                 300
Gln Phe Ser Leu Trp Thr Glu Thr His Pro Gly Trp Val Leu Asp Asn
305                 310                 315                 320
Leu Thr Leu Thr Gln Leu Gln Thr Phe Val Thr Ala Pro Val Ala Glu
            325                 330                 335
Gly Gly Leu Gly Leu Leu Pro Thr Gln Phe Asp Ser Ala Tyr Ala Ile
        340                 345                 350
Thr Asp Val Ile Tyr Gly Ile Gly Lys Phe Ser Ala Gly Asn Leu Phe
    355                 360                 365
Trp Gly Asn Ile Ile Gly Ser Leu Gly Glu Thr Ser Thr Phe Ala Cys
370                 375                 380
Leu Leu Gly Ala Ile Phe Leu Ile Val Thr Gly Ile Ala Ser Trp Arg
385                 390                 395                 400
Thr Met Ala Ala Phe Gly Ile Gly Ala Phe Leu Thr Gly Trp Leu Phe
            405                 410                 415
Lys Phe Ile Ser Val Leu Ile Val Gly Gln Asn Gly Ala Trp Ala Pro
        420                 425                 430
Ala Arg Phe Phe Ile Pro Ala Tyr Arg Gln Leu Phe Leu Gly Gly Leu
        435                 440                 445
Ala Phe Gly Leu Val Phe Met Ala Thr Asp Pro Val Ser Ser Pro Thr
    450                 455                 460
Met Lys Leu Gly Lys Trp Ile Tyr Gly Phe Phe Ile Gly Phe Met Thr
465                 470                 475                 480
Ile Val Ile Arg Leu Ile Asn Pro Ala Tyr Pro Glu Gly Val Met Leu
            485                 490                 495
Ala Ile Leu Leu Gly Asn Val Phe Ala Pro Leu Ile Asp Tyr Phe Ala
        500                 505                 510
```

693

```
Val Arg Lys Tyr Arg Lys Arg Gly Val
        515                 520


        <210> 430
        <211> 321
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 430
Asn Met Ser Lys Gly Ser Ser Lys His Thr Val Arg Ile Asn Gln Thr
1               5                   10              15
Trp Tyr Ile Val Ser Phe Ile Leu Gly Leu Ser Leu Phe Ala Gly Val
            20              25              30
Leu Leu Ser Thr Ile Tyr Tyr Val Leu Ser Pro Ile Gln Glu Gln Ala
        35              40              45
Ala Thr Phe Asp Arg Asn Lys Gln Met Leu Leu Ala Ala His Ile Leu
    50              55              60
Asp Phe Lys Gly Arg Phe Gln Ile Gln Glu Lys Lys Glu Trp Val Pro
65              70              ·  75              80
Ala Thr Phe Asp Lys Lys Thr Gln Leu Leu Glu Val Ala Thr Lys Lys
            . 85             90              95
Val Ser Glu Val Ser Tyr Pro Glu Leu Glu Leu Tyr Ala Glu Arg Phe
            100             105             110
Val Arg Pro Leu Leu Thr Asp Ala Gln Gly Lys Val Phe Ser Phe Glu
        115             120             125
Glu Lys Asn Leu Asn Pro Ile Glu Phe Phe Glu Lys Tyr Gln Glu Ser
        130             135             140
Pro Pro Cys Gln Gln Ser Pro Leu Pro Phe Tyr Val Ile Leu Glu Asn
145             150             155             160
Thr Ser Arg Thr Glu Asn Met Ser Gly Ala Asp Val Ala Lys Asp Leu
            165             170             175
Ser Thr Val Gln Ala Leu Ile Phe Pro Ile Ser Gly Phe Gly Leu Trp
            180             185             190
Gly Pro Ile His Gly Tyr Leu Gly Val Lys Asn Asp Gly Asp Thr Val
        195             200             205
Leu Gly Thr Ala Trp Tyr Gln Gln Gly Glu Thr Pro Gly Leu Gly Ala
    210             215             220
Asn Ile Thr Asn Pro Glu Trp Gln Glu Gln Phe Tyr Gly Lys Lys Ile
225             230             235             240
Phe Leu Gln Asp Ser Ser Gly Thr Thr Asn Phe Ala Thr Thr Asp Leu
            245             250             255
Gly Leu Glu Val Val Lys Gly Ser Val Arg Thr Thr Leu Gly Asp Ser
            260             265             270
Pro Lys Ala Leu Ser Ala Ile Asp Gly Ile Ser Gly Ala Thr Leu Thr
        275             280             285
Cys Asn Gly Val Thr Glu Ala Tyr Val Gln Ser Leu Ala Cys Tyr Arg
        290             295             300
Gln Leu Leu Ile Asn Phe Ser Asn Leu Thr His Glu Lys Lys Thr Gly
305             310             315             320
Glu


        <210> 431
        <211> 218
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 431
Lys Glu Asn Arg Arg Met Thr Ser Lys Lys Ser Tyr Lys Ser Tyr Phe
1               5                   10              15


                            694
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Phe Asp Pro Leu Trp Ser Asn Asn Gln Ile Leu Ile Ala Ile Leu Gly
        20   25   30
Ile Cys Ser Ala Leu Ala Val Thr Thr Thr Val Gln Thr Ala Ile Thr
        35   40   45
Met Gly Ile Ala Val Ser Ile Val Thr Gly Cys Ser Ser Phe Phe Val
    50   55   60
Ser Leu Leu Arg Lys Phe Thr Pro Asp Ser Val Arg Met Ile Thr Gln
65   70   75   80
Leu Ile Ile Ile Ser Leu Phe Val Ile Val Ile Asp Gln Phe Leu Lys
                85   90   95
Ala Phe Phe Phe Asp Ile Ser Lys Thr Leu Ser Val Phe Val Gly Leu
            100   105   110
Ile Ile Thr Asn Cys Ile Val Met Gly Arg Ser Glu Ser Leu Ala Arg
            115   120   125
His Val Thr Pro Ile Pro Ala Phe Leu Asp Gly Phe Ala Ser Gly Leu
    130   135   140
Gly Tyr Gly Trp Val Leu Leu Val Ile Gly Val Ile Arg Glu Leu Phe
145   150   155   160
Gly Phe Gly Thr Leu Met Gly Phe Arg Ile Ile Pro Gln Phe Val Tyr
                165   170   175
Ala Ser Glu Thr His Pro Asp Gly Tyr Gln Asn Leu Ser Leu Met Val
                180   185   190
Leu Ala Pro Ser Ala Phe Phe Leu Leu Gly Ile Met Ile Trp Leu Val
        195   200   205
Asn Ile Arg Asp Ser Lys Lys Arg Lys Arg
    210   215

        <210> 432
        <211> 257
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 432
Phe Met Trp Leu Gly Ala Tyr Thr Trp Leu Asn Val Phe Gly Ile Leu
1   5   10   15
Leu Gln Ala Ala Phe Ile Gln Asn Ile Leu Leu Ala Asn Phe Leu Gly
        20   25   30
Met Cys Ser Tyr Leu Ala Cys Ser Thr Arg Val Ser Thr Ala Asn Gly
        35   40   45
Leu Gly Met Ser Val Ala Leu Val Leu Thr Val Thr Gly Ser Ile Asn
    50   55   60
Trp Phe Val His Ala Phe Ile Thr Gly Pro Lys Ala Leu Thr Trp Ile
65   70   75   80
Ser Pro Ser Leu Ala Ser Val Asn Leu Gly Phe Leu Glu Leu Ile Ile
                85   90   95
Phe Ile Val Val Ile Ala Ala Phe Thr Gln Ile Leu Glu Leu Leu Leu
            100   105   110
Glu Lys Val Ser Arg Asn Leu Tyr Leu Ser Leu Gly Ile Phe Leu Pro
        115   120   125
Leu Ile Ala Val Asn Cys Ala Ile Leu Gly Gly Val Leu Phe Gly Ile
        130   135   140
Thr Arg Ser Tyr Pro Phe Ile Pro Met Met Ile Phe Ser Leu Gly Ala
145   150   155   160
Gly Cys Gly Trp Trp Leu Ala Ile Val Ile Leu Ala Thr Ile Lys Glu
                165   170   175
Lys Leu Ala Tyr Ser Asp Ile Pro Lys Asn Leu Gln Gly Met Gly Ile
                180   185   190
Ser Phe Ile Thr Thr Gly Leu Ile Ala Met Ala Phe Met Ser Leu Thr
        195   200   205
Gly Ile Asp Ile Ser Lys Pro Ser Ala Lys Ile Gln Arg Ala Pro Leu
    210   215   220

695

```
Glu Thr Glu Val Val Glu Asn Thr Thr Asn Pro Leu Lys Glu Ser Ser
225             230             235             240
Ser Lys His Gln Pro Ser Ile Ser Lys Ala Arg Thr Gln Arg Arg Ser
                245             250             255
Leu


        <210> 433
        <211> 113
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 433
Lys Ile Met Thr Thr Leu Pro Lys Tyr Val Pro Arg Ser Arg Gln Asn
1               5               10              15
Pro Asp Thr Leu Thr Phe Leu Lys Arg Tyr Ser Ser Val Leu Leu His
                20              25              30
Ser Glu Asn Ser Leu Ser Tyr Arg Ile Phe Ala Lys Val Leu Ala Ile
                35              40              45
Leu Leu Thr Ser Leu Ala Val Ala Phe Ala Val Thr Leu Phe Ser Cys
        50              55              60
Glu Gly Ser Gln Leu Arg Leu Cys Ala Leu Tyr Ile Gly Ile Ala Leu
65              70              75              80
Ala Ile Cys Val Leu Leu Thr Ile Val Val Tyr Cys Ile Ala Ser Lys
                85              90              95
Ile Ala Thr Ala Cys Lys Lys Pro Pro Ser Ile Ser Arg Ile Glu Ile
                100             105             110
Val


        <210> 434
        <211> 108
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 434
Lys Ile His Gln Asn Tyr Ser Met Asp Pro Ala Ser Pro Val Ala Pro
1               5               10              15
His Val Leu Gln Asp His Val Gln Leu Ser Ser Glu Glu Leu Ser Ala
                20              25              30
Leu Ser Ser Gly Val Ser Arg Val Lys Lys Leu Thr Ile Ala Ile Met
        35              40              45
Val Leu Ser Leu Ile Ala Ile Ser Leu Val Ala Cys Gly Leu Phe Leu
        50              55              60
Thr Gly Ser Ala Pro Leu Gln Leu Ser Ile Trp Ile Ala Ala Ser Cys
65              70              75              80
Ile Thr Leu Ser Met Leu Val Cys Ala Cys Trp Arg Tyr Lys Ile Ser
                85              90              95
Asn Ala Leu Glu Lys Thr Lys Val Ala His Glu Ser
        100             105


        <210> 435
        <211> 133
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 435
Arg Thr Phe Arg Ile Leu Tyr Gly Thr Leu Tyr Arg Thr Gly Ser Arg
1               5               10              15
Lys Val Met Trp Tyr Ser Asp Tyr His Val Trp Ile Leu Pro Val His
                20              25              30
```

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Glu Arg Val Val Arg Leu Gly Leu Thr Glu Lys Met Gln Lys Asn Leu
    35   40   45
Gly Ala Ile Leu His Val Asp Leu Pro Ser Val Gly Ser Leu Cys Lys
    50   55   60
Glu Gly Glu Val Leu Val Ile Leu Glu Ser Ser Lys Ser Ala Ile Glu
65   70   75   80
Val Leu Ser Pro Val Ser Gly Glu Val Ile Asp Ile Asn Leu Asp Leu
                85   90   95
Val Asp Asn Pro Gln Lys Ile Asn Glu Ala Pro Glu Gly Glu Gly Trp
            100   105   110
Leu Ala Val Val Arg Leu Asp Gln Asp Trp Asp Pro Ser Asn Leu Ser
        115   120   125
Leu Met Asp Glu Glu
    130

        <210> 436
        <211> 732
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 436
Arg Pro Trp Val Arg Ile Tyr Gln Gln Asp Leu Phe Cys Arg Leu Cys
1   5   10   15
Arg Asp Pro Ala Trp Phe Phe Ser Leu Leu Ser Phe Thr Leu Arg Phe
            20   25   30
Tyr Cys Leu Gly Arg Gly Trp Thr Leu Leu Ser Phe Phe Tyr Lys His
        35   40   45
Gln Lys Lys Phe Ile Gly Ile Val Ile Ala Val Val Cys Val Ser Gly
    50   55   60
Ile Gly Val Gly Trp Gly Arg Phe Ser Arg Lys Gly Ser Ala Glu Ser
65   70   75   80
Thr Ser Arg Arg Thr Val Phe Thr Thr Ala Ser Gly Lys Arg Tyr Val
                85   90   95
Glu Lys Asp Phe Met Ala Met Lys Lys Phe Phe Ala His Glu Ala Tyr
            100   105   110
Pro Phe Thr Gly Asn Pro Arg Ala Trp Asn Phe Ile Asn Glu Gly Leu
        115   120   125
Leu Thr Asp Tyr Phe Leu Thr Thr Arg Val Gly Glu Lys Leu Phe Leu
    130   135   140
Lys Val Tyr His Pro Gly Glu Lys Ile Phe Ser Lys Glu Lys Ala Tyr
145   150   155   160
Gln Pro Tyr Arg Arg Phe Asp Ala Pro Phe Ile Ser Ser Glu Glu Val
                165   170   175
Trp Lys Ser Ser Ala Pro Gln Leu Leu Glu Ile Leu Lys Val Phe Gln
            180   185   190
Gln Ile Glu Asn Pro Ile Ser Lys Glu Gly Phe Leu Ala Arg Ala Lys
        195   200   205
Leu Phe Leu Glu Glu Arg Arg Phe Pro His Tyr Val Leu Arg Gln Met
    210   215   220
Leu Glu Tyr Arg Arg Gln Met Phe Ala Leu Pro Pro Asp Glu Ala Leu
225   230   235   240
Ser Arg Gly Lys Asp Leu Arg Leu Phe Gly Tyr Gln Thr Ile Gln Asp
                245   250   255
Trp Phe Gly Asp Ala Tyr Leu Ser Ala Ala Val Glu Leu Leu Ile Arg
            260   265   270
Phe Ile Asp Glu Gln Lys Lys Val Leu Pro Arg Pro Ser Lys Gln Glu
        275   280   285
Ala Arg Asp Asp Phe Tyr Asp Lys Ala Lys His Ala Tyr Thr Lys Ile
    290   295   300
Ser Lys Asn Lys Glu Phe Ser Leu Gly Phe Glu Glu Phe Val Asn Ser
305   310   315   320

697

```
Tyr Phe Gln Phe Leu Glu Ile Ser Glu Ser Glu Phe Phe Asn Met Tyr
              325                 330                 335
Arg Asp Ile Leu Leu Cys Lys Arg Ala Leu Leu Leu Leu Gln Gly Gly
        340                 345             350
Val Ser Phe Asp Phe Gln Pro Leu Thr Thr Phe Phe Val Gln Gly Lys
        355                 360                 365
Asp Ser Ile Gln Val Glu Phe Phe Arg Leu Pro Lys Glu Tyr Ser Phe
        370                 375                 380
Lys Thr Lys Gln Glu Leu Lys Ala Phe Glu Val Tyr Leu Lys Leu Val
385                 390                 395                 400
Ser Leu Pro Lys Ser Asp Ser Leu Asp Val Pro Asn Glu Ile Leu Pro
            405                 410                 415
Ile Ala Thr Ile Lys Ala Lys Glu Pro Arg Leu Val Gly Arg Arg Phe
            420                 425                 430
Ser Ile Asp Tyr Lys Arg Val Ala Leu Gln Asp Leu Ala Ala Thr Val
        435                 440                 445
Pro Met Val Glu Val Leu His Trp Gln Gln Asn Ser Glu His Phe Gln
    450                 455                 460
Glu Ile Leu Gln Gln Phe Pro Asp Val Glu Thr Cys Gln Ser Tyr Lys
465                 470                 475                 480
Asp Phe Gln His Leu Lys Pro Ala Leu Arg Asp Lys Ile Ser Leu Phe
            485                 490                 495
Thr Arg Lys Glu Ile Leu Arg Ala Arg Pro Glu Arg Ile Leu Gln Ser
        500                 505                 510
Leu Gln Gln Val Pro Lys Gln Ser Gln Glu Val Leu Leu Ser Ala Gly
        515                 520                 525
Lys Asn Ser Ala Leu Pro Gly Ile Ser Asp Gly Gln Gln Leu Ala Lys
    530                 535                 540
Val Leu Leu Glu Asn Glu Val Leu Asp Leu Tyr Ser Gln Asp Ala Glu
545                 550                 555                 560
Thr Tyr Tyr Thr Ile Ile Val Asn Ser Ser Phe Glu Lys Glu Glu Val
            565                 570                 575
Leu Pro Tyr Arg Glu Val Leu Lys Arg Asp Leu Ala Ser Gln Leu Leu
        580                 585                 590
Thr Ser His Gly His Leu Val Asp Met Glu Arg Leu Glu Ser Ala Leu
        595                 600                 605
Arg Thr Arg Tyr Pro Gly Glu Glu Gly Ala Ser Leu Trp Gln Arg Arg
    610                 615                 620
Leu Trp Lys Val Val Glu Asn His Arg Leu Gly Arg His Leu Glu Gly
625                 630                 635                 640
Ser Phe Ser Trp Ser Leu Asp Arg Ser Leu Lys Thr Phe Ser Arg Gly
            645                 650                 655
Asp Lys Glu Leu Pro Gln Glu Phe Asp Arg Ile Phe Ser Met Lys Val
            660                 665                 670
Gly Asp Tyr Ser Ser Val Phe Met Ser Pro Asn Glu Gly Pro Cys Tyr
        675                 680                 685
Tyr Gln Cys Leu Ser His Leu Leu Tyr Asp Arg Pro Ala Ser Val Asp
    690                 695                 700
Lys Leu Phe Leu Ala Lys Ser Gln Leu Asp Glu Glu Leu Leu Gly Ser
705                 710                 715                 720
Tyr Met Glu Arg Phe Ile Glu Gln Gly Val Val Arg
            725                 730

        <210> 437
        <211> 478
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 437
Gly Val Met Met Ser Arg Leu Arg Phe Arg Leu Ala Ala Leu Gly Ile
 1               5                  10                  15
```

```
Phe Phe Ile Leu Leu Val Pro Asn Ser Val Ser Ala Lys Thr Ile Val
        20              25              30
Ala Ser Asp Lys Glu Lys Val Gly Val Leu Val Tyr Asp Asn Ser Val
        35              40              45
Glu Ala Phe Gln Gln Ile Leu Asp Cys Ile Asp His Ala Asn Phe Tyr
    50              55              60
Val Glu Leu Cys Pro Cys Met Thr Gly Gly Arg Thr Leu Lys Glu Met
65              70              75              80
Val Asp His Leu Glu Ala Arg Met Asp Leu Val Pro Glu Leu Cys Ser
            85              90              95
Tyr Ile Ile Ile Gln Pro Thr Phe Thr Asp Ala Glu Asp Gln Lys Leu
        100             105             110
Leu Lys Ala Leu Lys Glu Arg His Pro Asn Arg Phe Phe Tyr Val Phe
        115             120             125
Thr Gly Cys Pro Pro Ser Thr Ser Ile Leu Ala Pro Asn Val Ile Glu
    130             135             140
Met His Ile Lys Leu Ser Ile Ile Asp Gly Lys Tyr Cys Ile Leu Gly
145             150             155             160
Gly Thr Asn Phe Glu Glu Phe Met Cys Thr Pro Gly Asp Glu Val Pro
            165             170             175
Glu Lys Val Asp Asn Pro Arg Leu Phe Val Ser Gly Val Arg Arg Pro
            180             185             190
Leu Ala Phe Arg Asp Gln Asp Ile Met Leu Arg Ser Thr Ala Phe Gly
        195             200             205
Leu Gln Leu Arg Glu Glu Tyr His Lys Gln Phe Ala Met Trp Asp Tyr
    210             215             220
Tyr Ala His His Met Trp Phe Ile Asp Asn Pro Glu Gln Phe Ala Gly
225             230             235             240
Ala Cys Pro Pro Leu Thr Leu Glu Gln Ala Glu Glu Thr Val Phe Pro
            245             250             255
Gly Phe Asp Lys His Glu Asp Leu Val Leu Val Asp Ser Ser Lys Ile
            260             265             270
Arg Ile Val Leu Gly Gly Pro His Asp Lys Gln Pro Asn Pro Val Thr
        275             280             285
Gln Glu Tyr Leu Lys Leu Ile Gln Gly Ala Arg Ser Ser Val Lys Leu
    290             295             300
Ala His Met Tyr Phe Ile Pro Lys Asp Glu Leu Leu Asn Ala Leu Val
305             310             315             320
Asp Val Ser His Asn His Gly Val His Leu Ser Leu Ile Thr Asn Gly
            325             330             335
Cys His Glu Leu Ser Pro Ala Ile Thr Gly Pro Tyr Ala Trp Gly Asn
            340             345             350
Arg Ile Asn Tyr Phe Ala Leu Leu Tyr Gly Lys Arg Tyr Pro Leu Trp
        355             360             365
Lys Lys Trp Phe Cys Glu Lys Leu Lys Pro Tyr Glu Arg Val Ser Ile
        370             375             380
Tyr Glu Phe Ala Ile Trp Glu Thr Gln Leu His Lys Lys Cys Met Ile
385             390             395             400
Ile Asp Asp Glu Ile Phe Val Ile Gly Ser Tyr Asn Phe Gly Lys Lys
            405             410             415
Ser Asp Ala Phe Asp Tyr Glu Ser Ile Val Val Ile Glu Ser Pro Glu
            420             425             430
Val Ala Ala Lys Ala Asn Lys Val Phe Asn Lys Asp Ile Gly Leu Ser
            435             440             445
Ile Pro Val Ser His Gly Asp Ile Phe Ser Trp Tyr Phe His Ser Val
    450             455             460
His His Thr Leu Gly His Leu Gln Leu Thr Tyr Met Pro Ala
465             470             475
```

<210> 438
<211> 244
<212> PRT
<213> Chlamydia pneumoniae

<400> 438

```
Phe Tyr Val Cys Tyr Met Lys Val Arg Ile Val Asp Ser Gly Lys Ser
1               5                   10                  15
Ser Ala Ala Ser His Met Ala Lys Asp Arg Asp Leu Leu Glu Ser Leu
            20                  25                  30
Gln Asp Gly Glu Leu Ile Leu His Leu Tyr Glu Trp Glu Asn Pro Cys
        35                  40                  45
Ser Leu Thr Tyr Gly His Phe Met Arg Pro Glu Lys Phe Leu Leu Ser
    50                  55                  60
Asn Tyr Ala Asp Leu Gly Leu Asp Ala Ala Val Arg Pro Thr Gly Gly
65                  70                  75                  80
Gly Phe Val Phe His Lys Gly Asp Tyr Ala Phe Ser Val Leu Met Ser
            85                  90                  95
Ala Thr His Pro Ser Tyr Ser Ser Ser Val Leu Glu Asn Tyr His Thr
            100                 105                 110
Val Asn Ser Phe Val Ala Lys Val Leu Glu Lys Val Phe Arg Ile Gln
            115                 120                 125
Gly Met Leu Ala Pro Glu Asp Glu Asn Ser Ser Ser Arg Asp Ser Gly
    130                 135                 140
Asn Phe Cys Met Ala Lys Thr Ser Lys Tyr Asp Val Leu Phe Gly Asp
145                 150                 155                 160
Lys Lys Ile Gly Gly Ala Ala Gln Arg Lys Val Gln Gln Gly Phe Leu
            165                 170                 175
His Gln Gly Ser Leu Phe Leu Ser Gly Ser Ser Ser Glu Phe Tyr Gln
            180                 185                 190
Arg Phe Leu Lys Pro Glu Val Leu Glu Glu Ile Ile Glu Gln Ile Gln
    195                 200                 205
Ile His Ala Phe Phe Pro Leu Gly Leu Glu Ala Ala Asp Glu Val Leu
    210                 215                 220
Gln Glu Ala Arg Gln Gln Val Lys Glu Ala Phe Ile Lys Leu Phe Cys
225                 230                 235                 240
Gly Glu Gly Leu
```

<210> 439
<211> 847
<212> PRT
<213> Chlamydia pneumoniae

<400> 439

```
Val Phe Met Phe Glu Lys Phe Thr Asn Arg Ala Lys Gln Val Ile Lys
1               5                   10                  15
Leu Ala Lys Lys Glu Ala Gln Arg Leu Asn His Asn Tyr Leu Gly Thr
            20                  25                  30
Glu His Ile Leu Leu Gly Leu Leu Lys Leu Gly Gln Gly Val Ala Val
        35                  40                  45
Asn Val Leu Arg Asn Leu Gly Ile Asp Phe Asp Thr Ala Arg Gln Glu
    50                  55                  60
Val Glu Arg Leu Ile Gly Tyr Gly Pro Glu Ile Gln Val Tyr Gly Asp
65                  70                  75                  80
Pro Ala Leu Thr Gly Arg Val Lys Lys Ser Phe Glu Ser Ala Asn Glu
            85                  90                  95
Glu Ala Ser Leu Leu Glu His Asn Tyr Val Gly Thr Glu His Leu Leu
            100                 105                 110
Leu Gly Ile Leu His Gln Ser Asp Ser Val Ala Leu Gln Val Leu Glu
            115                 120                 125
```

700

```
Asn Leu His Ile Asp Pro Arg Glu Val Arg Lys Glu Ile Leu Arg Glu
    130                 135                 140
Leu Glu Thr Phe Asn Leu Gln Leu Pro Pro Ser Ser Ser Ser Ser Ser
145                 150                 155                 160
Ser Ser Ser Arg Ser Asn Pro Ser Ser Ser Lys Ser Pro Leu Gly His
                165                 170                 175
Ser Leu Gly Ser Asp Lys Asn Glu Lys Leu Ser Ala Leu Lys Ala Tyr
                180                 185                 190
Gly Tyr Asp Leu Thr Glu Met Val Arg Glu Ser Lys Leu Asp Pro Val
            195                 200                 205
Ile Gly Arg Ser Ser Glu Val Glu Arg Leu Ile Leu Ile Leu Cys Arg
    210                 215                 220
Arg Arg Lys Asn Asn Pro Val Leu Ile Gly Glu Ala Gly Val Gly Lys
225                 230                 235                 240
Thr Ala Ile Val Glu Gly Leu Ala Gln Lys Ile Ile Leu Asn Glu Val
                245                 250                 255
Pro Asp Ala Leu Arg Lys Lys Arg Leu Ile Thr Leu Asp Leu Ala Leu
                260                 265                 270
Met Ile Ala Gly Thr Lys Tyr Arg Gly Gln Phe Glu Glu Arg Ile Lys
            275                 280                 285
Ala Val Met Asp Glu Val Arg Lys His Gly Asn Ile Leu Leu Phe Ile
    290                 295                 300
Asp Glu Leu His Thr Ile Val Gly Ala Gly Ala Ala Glu Gly Ala Ile
305                 310                 315                 320
Asp Ala Ser Asn Ile Leu Lys Pro Ala Leu Ala Arg Gly Glu Ile Gln
                325                 330                 335
Cys Ile Gly Ala Thr Thr Ile Asp Glu Tyr Arg Lys His Ile Glu Lys
            340                 345                 350
Asp Ala Ala Leu Glu Arg Arg Phe Gln Lys Ile Val Val His Pro Pro
            355                 360                 365
Ser Val Asp Glu Thr Ile Glu Ile Leu Arg Gly Leu Lys Lys Lys Tyr
    370                 375                 380
Glu Glu His His Asn Val Phe Ile Thr Glu Glu Ala Leu Lys Ala Ala
385                 390                 395                 400
Ala Thr Leu Ser Asp Gln Tyr Val His Gly Arg Phe Leu Pro Asp Lys
                405                 410                 415
Ala Ile Asp Leu Leu Asp Glu Ala Gly Ala Arg Val Arg Val Asn Thr
            420                 425                 430
Met Gly Gln Pro Thr Asp Leu Met Lys Leu Glu Ala Glu Ile Glu Asn
    435                 440                 445
Thr Lys Leu Ala Lys Glu Gln Ala Ile Gly Thr Gln Glu Tyr Glu Lys
    450                 455                 460
Ala Ala Gly Leu Arg Asp Glu Glu Lys Lys Leu Arg Glu Arg Leu Gln
465                 470                 475                 480
Ser Met Lys Gln Glu Trp Glu Asn His Lys Glu Glu His Gln Val Pro
            485                 490                 495
Val Asp Glu Glu Ala Val Ala Gln Val Val Ser Leu Gln Thr Gly Ile
            500                 505                 510
Pro Ser Ala Arg Leu Thr Glu Ala Glu Ser Glu Lys Leu Leu Lys Leu
    515                 520                 525
Glu Asp Thr Leu Arg Arg Lys Val Ile Gly Gln Asn Asp Ala Val Thr
    530                 535                 540
Ser Ile Cys Arg Ala Ile Arg Arg Ser Arg Thr Gly Ile Lys Asp Pro
545                 550                 555                 560
Asn Arg Pro Thr Gly Ser Phe Leu Phe Leu Gly Pro Thr Gly Val Gly
                565                 570                 575
Lys Ser Leu Leu Ala Gln Gln Ile Ala Ile Glu Met Phe Gly Gly Glu
            580                 585                 590
Asp Ala Leu Ile Gln Val Asp Met Ser Glu Tyr Met Glu Lys Phe Ala
    595                 600                 605
```

Ala Thr Lys Met Met Gly Ser Pro Pro Gly Tyr Val Gly His Glu Glu
    610   615   620
Gly Gly His Leu Thr Glu Gln Val Arg Arg Arg Pro Tyr Cys Val Val
625   630   635   640
Leu Phe Asp Glu Ile Glu Lys Ala His Pro Asp Ile Met Asp Leu Met
            645   650   655
Leu Gln Ile Leu Glu Gln Gly Arg Leu Thr Asp Ser Phe Gly Arg Lys
            660   665   670
Val Asp Phe Arg His Ala Ile Ile Ile Met Thr Ser Asn Leu Gly Ala
        675   680   685
Asp Leu Ile Arg Lys Ser Gly Glu Ile Gly Phe Gly Leu Lys Ser His
        690   695   700
Met Asp Tyr Lys Val Ile Gln Glu Lys Ile Glu His Ala Met Lys Lys
705   710   715   720
His Leu Lys Pro Glu Phe Ile Asn Arg Leu Asp Glu Ser Val Ile Phe
            725   730   735
Arg Pro Leu Glu Lys Glu Ser Leu Ser Glu Ile Ile His Leu Glu Ile
            740   745   750
Asn Lys Leu Asp Ser Arg Leu Lys Asn Tyr Gln Met Ala Leu Asn Ile
        755   760   765
Pro Asp Ser Val Ile Ser Phe Leu Val Thr Lys Gly His Ser Pro Glu
        770   775   780
Met Gly Ala Arg Pro Leu Arg Arg Val Ile Glu Gln Tyr Leu Glu Asp
785   790   795   800
Pro Leu Ala Glu Leu Leu Leu Lys Glu Ser Cys Arg Gln Glu Ala Arg
            805   810   815
Lys Leu Arg Ala Thr Leu Val Glu Asn Arg Val Ala Phe Glu Arg Glu
            820   825   830
Glu Glu Glu Gln Glu Ala Ala Leu Pro Ser Pro His Leu Glu Ser
        835   840   845

        <210> 440
        <211> 374
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 440
Asn Leu Thr Leu Pro Met Arg Arg Gln Val Arg Glu Ile Met Gln Gln
1   5   10   15
Thr Val Ile Val Ala Met Ser Gly Gly Val Asp Ser Ser Val Val Ala
            20   25   30
Tyr Leu Phe Lys Lys Phe Thr Asn Tyr Lys Val Ile Gly Leu Phe Met
        35   40   45
Lys Asn Trp Glu Glu Asp Ser Glu Gly Gly Leu Cys Ser Ser Thr Lys
    50   55   60
Asp Tyr Glu Asp Val Glu Arg Val Cys Leu Gln Leu Asp Ile Pro Tyr
65   70   75   80
Tyr Thr Val Ser Phe Ala Lys Glu Tyr Arg Glu Arg Val Phe Ala Arg
            85   90   95
Phe Leu Lys Glu Tyr Ser Leu Gly Tyr Thr Pro Asn Pro Asp Ile Leu
            100   105   110
Cys Asn Arg Glu Ile Lys Phe Asp Leu Leu Gln Lys Lys Val Gln Glu
        115   120   125
Leu Gly Gly Asp Tyr Leu Ala Thr Gly His Tyr Cys Arg Leu Asn Thr
    130   135   140
Glu Leu Gln Glu Thr Gln Leu Leu Arg Gly Cys Asp Pro Gln Lys Asp
145   150   155   160
Gln Ser Tyr Phe Leu Ser Gly Thr Pro Lys Ser Ala Leu His Asn Val
            165   170   175
Leu Phe Pro Leu Gly Glu Met Asn Lys Thr Glu Val Arg Ala Ile Ala
            180   185   190

702

```
Ala Gln Ala Ala Leu Pro Thr Ala Glu Lys Lys Asp Ser Thr Gly Ile
    195                     200                 205
Cys Phe Ile Gly Lys Arg Pro Phe Lys Glu Phe Leu Glu Lys Phe Leu
    210                     215                 220
Pro Asn Lys Thr Gly Asn Val Ile Asp Trp Asp Thr Lys Glu Ile Val
225                     230                 235                 240
Gly Gln His Gln Gly Ala His Tyr Tyr Thr Ile Gly Gln Arg Arg Gly
                245                 250                 255
Leu Asp Leu Gly Gly Ser Glu Lys Pro Cys Tyr Val Val Gly Lys Asn
            260                 265                 270
Ile Glu Glu Asn Ser Ile Tyr Ile Val Arg Gly Glu Asp His Pro Gln
    275                 280                 285
Leu Tyr Leu Arg Glu Leu Thr Ala Arg Glu Leu Asn Trp Phe Thr Pro
    290                 295                 300
Pro Lys Ser Gly Cys His Cys Ser Ala Lys Val Arg Tyr Arg Ser Pro
305                 310                 315                 320
Asp Glu Ala Cys Thr Ile Asp Tyr Ser Ser Gly Asp Glu Val Lys Val
                325                 330                 335
Arg Phe Ser Gln Pro Val Lys Ala Val Thr Pro Gly Gln Thr Ile Ala
            340                 345                 350
Phe Tyr Gln Gly Asp Thr Cys Leu Gly Ser Gly Val Ile Asp Val Pro
    355                 360                 365
Met Ile Pro Ser Glu Gly
    370


        <210> 441
        <211> 185
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 441
Ile Ile Ser Ser Asn Asn Arg Val Leu Phe Val Ser Ser Thr Leu Asn
1               5                   10                  15
Gly Val Phe Pro Ser Ser Leu Pro Glu Glu Ser Ala Asp Leu Phe Ile
            20                  25                  30
Thr Asn Lys Glu Ile Val Ala Leu Gly Glu Lys Gly Asn Val Phe Leu
        35                  40                  45
Thr His Ser Ile Pro Met His Ile Ala Ala Ile Thr Ile Leu Val Ile
    50                  55                  60
Val Ala Leu Ala Gly Ile Ala Ile Ile Cys Leu Gly Cys Tyr Ser Gln
65                  70                  75                  80
Ser Ile Leu Leu Ile Ala Val Gly Ile Val Leu Thr Ile Leu Thr Leu
                85                  90                  95
Leu Cys Leu Gln Ala Leu Val Gly Phe Ile Lys Phe Ile Arg Gln Leu
            100                 105                 110
Pro Gln Gln Leu His Thr Thr Val Gln Phe Ile Arg Glu Lys Ile Arg
    115                 120                 125
Pro Glu Ser Ser Leu Gln Leu Val Thr Asn Ala Gln Arg Lys Thr Thr
    130                 135                 140
Gln Asp Thr Leu Lys Leu Tyr Glu Glu Leu Cys Asp Leu Ser Gln Lys
145                 150                 155                 160
Glu Phe Lys Leu Gln Ser Thr Leu Tyr Gln Lys Arg Phe Glu Leu Ser
                165                 170                 175
His Lys Asn Glu Lys Thr Asn Gln Asn
            180                 185


        <210> 442
        <211> 220
        <212> PRT
        <213> Chlamydia pneumoniae
```

703

<400> 442

```
Leu Ala Thr Ile Arg Gly Asn Asn Met Ala Thr Ser Val Ala Pro Ser
1               5                   10                  15
Pro Val Pro Glu Ser Ser Pro Leu Ser His Ala Thr Glu Val Leu Asn
            20                  25                  30
Leu Pro Asn Ala Tyr Ile Thr Gln Pro His Pro Ile Pro Ala Ala Pro
        35                  40                  45
Trp Glu Thr Phe Arg Ser Lys Leu Ser Thr Lys His Thr Leu Cys Phe
    50                  55                  60
Ala Leu Thr Leu Leu Leu Thr Leu Gly Gly Thr Ile Ser Ala Gly Tyr
65                  70                  75                  80
Ala Gly Tyr Thr Gly Asn Trp Ile Ile Cys Gly Ile Gly Leu Gly Ile
            85                  90                  95
Ile Val Leu Thr Leu Ile Leu Ala Leu Leu Leu Ala Ile Pro Leu Lys
            100                 105                 110
Asn Lys Gln Thr Gly Thr Lys Leu Ile Asp Glu Ile Ser Gln Asp Ile
        115                 120                 125
Ser Ser Ile Gly Ser Gly Phe Val Gln Arg Tyr Gly Leu Met Phe Ser
    130                 135                 140
Thr Ile Lys Ser Val His Leu Pro Glu Leu Thr Thr Gln Asn Gln Glu
145                 150                 155                 160
Lys Thr Arg Ile Leu Asn Glu Ile Glu Ala Lys Lys Glu Ser Ile Gln
            165                 170                 175
Asn Leu Glu Leu Lys Ile Thr Glu Cys Gln Asn Lys Leu Ala Gln Lys
            180                 185                 190
Gln Pro Lys Arg Lys Ser Ser Gln Lys Ser Phe Met Arg Ser Ile Lys
        195                 200                 205
His Leu Ser Lys Asn Pro Val Ile Leu Phe Asp Cys
    210                 215                 220
```

<210> 443
<211> 323
<212> PRT
<213> Chlamydia pneumoniae

<400> 443

```
Arg Trp Arg Ile Leu Gln Asn Met Phe Lys Leu Leu Phe His Ile Ala
1               5                   10                  15
Ala Phe Ala Gly His Val Leu Ser Thr Pro Ile Phe Ile Val Gln Asp
            20                  25                  30
Ala Cys Gly Ile Asp Glu Glu Ala Cys Lys Asn Pro Pro Pro Arg Pro
        35                  40                  45
Phe Ser Ala Gln Val Gln Tyr Leu Lys Val Asn Asp Ala Lys Phe Lys
    50                  55                  60
Lys Leu Pro His Gln Thr Ile Gly Tyr Arg Gln Tyr Asp Gly Thr Phe
65                  70                  75                  80
Leu Cys Thr Leu Pro Ile Thr Glu His Ser Gly Leu Leu Phe Ser Thr
            85                  90                  95
Gly Tyr Ile Gly Ala Asp Ile Gln Trp Lys Ser Ser Leu Pro Ile Ser
            100                 105                 110
Glu Thr Asp Pro Asn Gly Leu Gly Trp Ala Thr Phe Gln Asp Thr Ser
        115                 120                 125
Phe Tyr Asn Tyr Val Leu Leu Ser Leu Gly Ala Tyr Thr Leu Ser Leu
    130                 135                 140
Lys Asn Trp Gln Trp Ser Ile Ile Leu Ser Gly Leu Val Asp Pro Lys
145                 150                 155                 160
Asn Ile Glu Met Gly Tyr Gly Leu Tyr Gln Gly Val Leu Ser Gly Lys
            165                 170                 175
Tyr Gln Ala Thr Glu Lys Leu Ser Ala Ile Phe Gly Val Ile Asn Glu
        180                 185                 190
```

Thr Gly Leu His Gln Glu Lys Ala Trp Pro Leu Val Gly Val Ser Tyr
        195   200   205
Lys Ala Thr Asp Gln Leu Thr Leu Asn Cys Ile Tyr Pro Val Asn Phe
    210   215   220
Ser Ile Asp Tyr Arg Ser Thr Ser Val Cys Asn Leu Gly Leu Ala Tyr
225   230   235   240
Arg Leu Thr Arg Phe Arg Lys Lys Leu His Lys Asn His Leu Ile Ser
            245   250   255
Ser Arg Gly Ile Phe Glu Tyr Gln Gly Arg Glu Ile Glu Ala Asn Val
            260   265   270
Lys Leu Thr Pro Trp Pro Gly Ser Phe Ile Lys Gly Phe Tyr Gly Trp
            275   280   285
Ser Ile Gly Asn Asp Ile Ser Ile Ala Asp Asp His Asn Asn Asn Lys
    290   295   300
Thr Ser His Thr Phe Lys Thr Ser Ala Phe Phe Gly Gly Ser Ala Val
305   310   315   320
Met Asn Phe

        <210> 444
        <211> 179
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 444
Asn Ile Leu Phe Gln Thr Asp Met Gly Phe Lys Asn Ile Cys Lys Gln
1   5   10   15
Gly Ser Gln Leu Tyr Leu Asn Gly Ile Phe Pro Glu Arg Ile Leu Ala
            20   25   30
Arg Lys Leu Lys Asn Cys Ala Lys Ser Tyr Pro Arg Thr Ala Leu Thr
        35   40   45
Ile Glu Val Leu Val Ser Ser Val Leu Gly Ala Leu Lys Val Ile Leu
    50   55   60
Ile Pro Cys Ala Ser Thr Tyr Ala Ala Leu Thr Leu Pro Leu Arg Ala
65   70   75   80
Leu Phe Asn Ala Ile Lys Thr Lys Ser Cys Gln His Leu Ala Ser Tyr
            85   90   95
Ala Met Ala Trp Leu Leu His Ile Leu Thr Ile Ala Val Ile Ile Gly
        100   105   110
Leu Val Phe Ser Leu Val Phe Ile Pro Pro Pro Val Val Phe Ile Ser
        115   120   125
Leu Gly Leu Leu Met Ser Val Thr Thr Ser Val Thr Leu Phe Gln Val
    130   135   140
His Lys Asn Leu Phe Pro Pro Tyr Glu Pro Pro Pro Ser Arg Pro His
145   150   155   160
Thr Pro Pro Pro Phe Ala Asp Glu Tyr Val Pro Leu Ile Ser Glu Ser
            165   170   175
Tyr Phe Asp

        <210> 445
        <211> 420
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 445
Val Asp Ser Met Ser Gln Pro Pro Ile Asn Pro Leu Gly Gln Pro Gln
1   5   10   15
Val Pro Ala Ala Ala Ser Pro Ser Gly Gln Pro Ser Val Val Lys Arg
            20   25   30

705

```
Leu Lys Thr Ser Ser Thr Gly Leu Phe Lys Arg Phe Ile Thr Ile Pro
    35                      40                  45
Asp Lys Tyr Pro Lys Met Arg Tyr Val Tyr Asp Thr Gly Ile Ile Ala
    50                  55                  60
Leu Ala Ala Ile Ala Ile Leu Ser Ile Leu Leu Thr Ala Ser Gly Asn
65                      70                  75                  80
Ser Leu Met Leu Tyr Ala Leu Ala Pro Ala Leu Ala Leu Gly Ala Leu
                85                  90                  95
Gly Val Thr Leu Leu Ile Ser Asp Ile Leu Asp Ser Pro Lys Ala Lys
            100                 105                 110
Lys Ile Gly Glu Ala Ile Thr Ala Ile Val Val Pro Ile Ile Val Leu
            115                 120                 125
Ala Ile Ala Ala Gly Leu Ile Ala Gly Ala Phe Val Ala Ser Ser Gly
    130                 135                 140
Thr Met Leu Val Phe Ala Asn Pro Met Phe Val Met Gly Leu Ile Thr
145                 150                 155                 160
Val Gly Leu Tyr Phe Met Ser Leu Asn Lys Leu Thr Leu Asp Tyr Phe
                165                 170                 175
Arg Arg Glu His Leu Leu Arg Met Glu Lys Lys Thr Gln Glu Thr Ala
            180                 185                 190
Glu Pro Ile Leu Val Thr Pro Ser Ala Asp Asp Ala Lys Lys Ile Ala
            195                 200                 205
Val Glu Lys Lys Lys Asp Leu Ser Ala Ser Ala Arg Met Glu Glu His
    210                 215                 220
Glu Ala Ser Gln Arg Gln Asp Ala Arg His Arg Arg Ile Gly Arg Glu
225                 230                 235                 240
Ala Gln Gly Ser Phe Phe Tyr Ser Ser Arg Asn Pro Glu His Arg Arg
                245                 250                 255
Ser Phe Gly Ser Leu Ser Arg Phe Lys Thr Lys Pro Ser Asp Ala Ala
                260                 265                 270
Ser Thr Arg Pro Ala Ser Ile Ser Pro Pro Phe Lys Asp Asp Phe Gln
            275                 280                 285
Pro Tyr His Phe Lys Asp Leu Arg Ser Ser Ser Phe Gly Ser Gly Ala
    290                 295                 300
Ser Ser Ala Phe Thr Pro Ile Met Pro Ala Ser Ser Arg Ser Pro Asn
305                 310                 315                 320
Phe Ser Thr Gly Thr Val Leu His Pro Glu Pro Val Tyr Pro Lys Gly
                325                 330                 335
Gly Lys Glu Pro Ser Ile Pro Arg Val Ser Ser Ser Ser Arg Arg Ser
            340                 345                 350
Pro Arg Asp Arg Gln Asp Lys Gln Gln Gln Gln Asn Gln Asp Glu
            355                 360                 365
Glu Gln Lys Gln Gln Ser Lys Lys Lys Ser Gly Lys Ser Asn Gln Ser
    370                 375                 380
Leu Lys Thr Pro Pro Pro Asp Gly Lys Ser Thr Ala Asn Leu Ser Pro
385                 390                 395                 400
Ser Asn Pro Phe Ser Asp Gly Tyr Asp Glu Arg Glu Lys Arg Lys His
                405                 410                 415
Arg Lys Asn Lys
            420


        <210> 446
        <211> 1414
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 446
Lys Ala Phe Pro Gln Arg His Met Lys Tyr Ser Leu Pro Trp Leu Leu
 1              5                   10                  15
Thr Ser Ser Ala Leu Val Phe Ser Leu His Pro Leu Met Ala Ala Asn
            20                  25                  30
```

706

```
Thr Asp Leu Ser Ser Ser Asp Asn Tyr Glu Asn Gly Ser Ser Gly Ser
    35                      40                  45
Ala Ala Phe Thr Ala Lys Glu Thr Ser Asp Ala Ser Gly Thr Thr Tyr
    50                      55                  60
Thr Leu Thr Ser Asp Val Ser Ile Thr Asn Val Ser Ala Ile Thr Pro
65                      70                  75                  80
Ala Asp Lys Ser Cys Phe Thr Asn Thr Gly Gly Ala Leu Ser Phe Val
            85                  90                  95
Gly Ala Asp His Ser Leu Val Leu Gln Thr Ile Ala Leu Thr His Asp
            100                 105                 110
Gly Ala Ala Ile Asn Asn Thr Asn Thr Ala Leu Ser Phe Ser Gly Phe
            115                 120                 125
Ser Ser Leu Leu Ile Asp Ser Ala Pro Ala Thr Gly Thr Ser Gly Gly
    130                     135                 140
Lys Gly Ala Ile Cys Val Thr Asn Thr Glu Gly Gly Thr Ala Thr Phe
145                     150                 155                 160
Thr Asp Asn Ala Ser Val Thr Leu Gln Lys Asn Thr Ser Glu Lys Asp
            165                 170                 175
Gly Ala Ala Val Ser Ala Tyr Ser Ile Asp Leu Ala Lys Thr Thr Thr
            180                 185                 190
Ala Ala Leu Leu Asp Gln Asn Thr Ser Thr Lys Asn Gly Gly Ala Leu
    195                     200                 205
Cys Ser Thr Ala Asn Thr Thr Val Gln Gly Asn Ser Gly Thr Val Thr
    210                     215                 220
Phe Ser Ser Asn Thr Ala Thr Asp Lys Gly Gly Gly Ile Tyr Ser Lys
225                     230                 235                 240
Glu Lys Asp Ser Thr Leu Asp Ala Asn Thr Gly Val Val Thr Phe Lys
            245                 250                 255
Ser Asn Thr Ala Lys Thr Gly Gly Ala Trp Ser Ser Asp Asp Asn Leu
            260                 265                 270
Ala Leu Thr Gly Asn Thr Gln Val Leu Phe Gln Glu Asn Lys Thr Thr
    275                     280                 285
Gly Ser Ala Ala Gln Ala Asn Asn Pro Glu Gly Cys Gly Gly Ala Ile
    290                     295                 300
Cys Cys Tyr Leu Ala Thr Ala Thr Asp Lys Thr Gly Leu Ala Ile Ser
305                     310                 315                 320
Gln Asn Gln Glu Met Ser Phe Thr Ser Asn Thr Thr Thr Ala Asn Gly
            325                 330                 335
Gly Ala Ile Tyr Ala Thr Lys Cys Thr Leu Asp Gly Asn Thr Thr Leu
            340                 345                 350
Thr Phe Asp Gln Asn Thr Ala Thr Ala Gly Cys Gly Gly Ala Ile Tyr
    355                     360                 365
Thr Glu Thr Glu Asp Phe Ser Leu Lys Gly Ser Thr Gly Thr Val Thr
    370                     375                 380
Phe Ser Thr Asn Thr Ala Lys Thr Gly Gly Ala Leu Tyr Ser Lys Gly
385                     390                 395                 400
Asn Ser Ser Leu Thr Gly Asn Thr Asn Leu Leu Phe Ser Gly Asn Lys
            405                 410                 415
Ala Thr Gly Pro Ser Asn Ser Ser Ala Asn Gln Glu Gly Cys Gly Gly
            420                 425                 430
Ala Ile Leu Ala Phe Ile Asp Ser Gly Ser Val Ser Asp Lys Thr Gly
    435                     440                 445
Leu Ser Ile Ala Asn Asn Gln Glu Val Ser Leu Thr Ser Asn Ala Ala
    450                     455                 460
Thr Val Ser Gly Gly Ala Ile Tyr Ala Thr Lys Cys Thr Leu Thr Gly
465                     470                 475                 480
Asn Gly Ser Leu Thr Phe Asp Gly Asn Thr Ala Gly Thr Ser Gly Gly
            485                 490                 495
Ala Ile Tyr Thr Glu Thr Glu Asp Phe Thr Leu Thr Gly Ser Thr Gly
            500                 505                 510
```

707

```
Thr Val Thr Phe Ser Thr Asn Thr Ala Lys Thr Gly Gly Ala Leu Tyr
    515                 520                 525
Ser Lys Gly Asn Asn Ser Leu Ser Gly Asn Thr Asn Leu Leu Phe Ser
    530                 535                 540
Gly Asn Lys Ala Thr Gly Pro Ser Asn Ser Ser Ala Asn Gln Glu Gly
545                 550                 555                 560
Cys Gly Gly Ala Ile Leu Ser Phe Leu Glu Ser Ala Ser Val Ser Thr
                565                 570                 575
Lys Lys Gly Leu Trp Ile Glu Asp Asn Glu Asn Val Ser Leu Ser Gly
        580                 585                 590
Asn Thr Ala Thr Val Ser Gly Gly Ala Ile Tyr Ala Thr Lys Cys Ala
        595                 600                 605
Leu His Gly Asn Thr Thr Leu Thr Phe Asp Gly Asn Thr Ala Glu Thr
    610                 615                 620
Ala Gly Gly Ala Ile Tyr Thr Glu Thr Glu Asp Phe Thr Leu Thr Gly
625                 630                 635                 640
Ser Thr Gly Thr Val Thr Phe Ser Thr Asn Thr Ala Lys Thr Ala Gly
                645                 650                 655
Ala Leu His Thr Lys Gly Asn Thr Ser Phe Thr Lys Asn Lys Ala Leu
        660                 665                 670
Val Phe Ser Gly Asn Ser Ala Thr Ala Thr Ala Thr Thr Thr Thr Asp
        675                 680                 685
Gln Glu Gly Cys Gly Gly Ala Ile Leu Cys Asn Ile Ser Glu Ser Asp
    690                 695                 700
Ile Ala Thr Lys Ser Leu Thr Leu Thr Glu Asn Glu Ser Leu Ser Phe
705                 710                 715                 720
Ile Asn Asn Thr Ala Lys Arg Ser Gly Gly Gly Ile Tyr Ala Pro Lys
            725                 730                 735
Cys Val Ile Ser Gly Ser Glu Ser Ile Asn Phe Asp Gly Asn Thr Ala
        740                 745                 750
Glu Thr Ser Gly Gly Ala Ile Tyr Ser Lys Asn Leu Ser Ile Thr Ala
    755                 760                 765
Asn Gly Pro Val Ser Phe Thr Asn Asn Ser Gly Gly Lys Gly Gly Ala
    770                 775                 780
Ile Tyr Ile Ala Asp Ser Gly Glu Leu Ser Leu Glu Ala Ile Asp Gly
785                 790                 795                 800
Asp Ile Thr Phe Ser Gly Asn Arg Ala Thr Glu Gly Thr Ser Thr Pro
                805                 810                 815
Asn Ser Ile His Leu Gly Ala Gly Ala Lys Ile Thr Lys Leu Ala Ala
            820                 825                 830
Ala Pro Gly His Thr Ile Tyr Phe Tyr Asp Pro Ile Thr Met Glu Ala
        835                 840                 845
Pro Ala Ser Gly Gly Thr Ile Glu Glu Leu Val Ile Asn Pro Val Val
    850                 855                 860
Lys Ala Ile Val Pro Pro Pro Gln Pro Lys Asn Gly Pro Ile Ala Ser
865                 870                 875                 880
Val Pro Val Val Pro Val Ala Pro Ala Asn Pro Asn Thr Gly Thr Ile
                885                 890                 895
Val Phe Ser Ser Gly Lys Leu Pro Ser Gln Asp Ala Ser Ile Pro Ala
        900                 905                 910
Asn Thr Thr Thr Ile Leu Asn Gln Lys Ile Asn Leu Ala Gly Gly Asn
    915                 920                 925
Val Val Leu Lys Glu Gly Ala Thr Leu Gln Val Tyr Ser Phe Thr Gln
    930                 935                 940
Gln Pro Asp Ser Thr Val Phe Met Asp Ala Gly Thr Thr Leu Glu Thr
945                 950                 955                 960
Thr Thr Thr Asn Asn Thr Asp Gly Ser Ile Asp Leu Lys Asn Leu Ser
                965                 970                 975
Val Asn Leu Asp Ala Leu Asp Gly Lys Arg Met Ile Thr Ile Ala Val
        980                 985                 990
```

708

```
Asn Ser Thr Ser Gly Gly Leu Lys Ile Ser Gly Asp Leu Lys Phe His
        995                 1000                1005
Asn Asn Glu Gly Ser Phe Tyr Asp Asn Pro Gly Leu Lys Ala Asn Leu
        1010                1015                1020
Asn Leu Pro Phe Leu Asp Leu Ser Ser Thr Ser Gly Thr Val Asn Leu
1025                1030                1035                1040
Asp Asp Phe Asn Pro Ile Pro Ser Ser Met Ala Ala Pro Asp Tyr Gly
                1045                1050                1055
Tyr Gln Gly Ser Trp Thr Leu Val Pro Lys Val Gly Ala Gly Gly Lys
                1060                1065                1070
Val Thr Leu Val Ala Glu Trp Gln Ala Leu Gly Tyr Thr Pro Lys Pro
        1075                1080                1085
Glu Leu Arg Ala Thr Leu Val Pro Asn Ser Leu Trp Asn Ala Tyr Val
        1090                1095                1100
Asn Ile His Ser Ile Gln Gln Glu Ile Ala Thr Ala Met Ser Asp Ala
1105                1110                1115                1120
Pro Ser His Pro Gly Ile Trp Ile Gly Gly Ile Gly Asn Ala Phe His
                1125                1130                1135
Gln Asp Lys Gln Lys Glu Asn Ala Gly Phe Arg Leu Ile Ser Arg Gly
        1140                1145                1150
Tyr Ile Val Gly Gly Ser Met Thr Thr Pro Gln Glu Tyr Thr Phe Ala
        1155                1160                1165
Val Ala Phe Ser Gln Leu Phe Gly Lys Ser Lys Asp Tyr Val Val Ser
        1170                1175                1180
Asp Ile Lys Ser Gln Val Tyr Ala Gly Ser Leu Cys Ala Gln Ser Ser
1185                1190                1195                1200
Tyr Val Ile Pro Leu His Ser Ser Leu Arg Arg His Val Leu Ser Lys
                1205                1210                1215
Val Leu Pro Glu Leu Pro Gly Glu Thr Pro Leu Val Leu His Gly Gln
                1220                1225                1230
Val Ser Tyr Gly Arg Asn His His Asn Met Thr Thr Lys Leu Ala Asn
        1235                1240                1245
Asn Thr Gln Gly Lys Ser Asp Trp Asp Ser His Ser Phe Ala Val Glu
        1250                1255                1260
Val Gly Gly Ser Leu Pro Val Asp Leu Asn Tyr Arg Tyr Leu Thr Ser
1265                1270                1275                1280
Tyr Ser Pro Tyr Val Lys Leu Gln Val Val Ser Val Asn Gln Lys Gly
                1285                1290                1295
Phe Gln Glu Val Ala Ala Asp Pro Arg Ile Phe Asp Ala Ser His Leu
                1300                1305                1310
Val Asn Val Ser Ile Pro Met Gly Leu Thr Phe Lys His Glu Ser Ala
        1315                1320                1325
Lys Pro Pro Ser Ala Leu Leu Thr Leu Gly Tyr Ala Val Asp Ala
        1330                1335                1340
Tyr Arg Asp His Pro His Cys Leu Thr Ser Leu Thr Asn Gly Thr Ser
1345                1350                1355                1360
Trp Ser Thr Phe Ala Thr Asn Leu Ser Arg Gln Ala Phe Phe Ala Glu
                1365                1370                1375
Ala Ser Gly His Leu Lys Leu Leu His Gly Leu Asp Cys Phe Ala Ser
                1380                1385                1390
Gly Ser Cys Glu Leu Arg Ser Ser Ser Arg Ser Tyr Asn Ala Asn Cys
        1395                1400                1405
Gly Thr Arg Tyr Ser Phe
        1410

        <210> 447
        <211> 947
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 447

```
Phe Asn Phe Leu Val Ser Lys Lys Cys Leu Gln Met Lys Ser Ser Val
1               5                   10                  15
Ser Trp Leu Phe Phe Ser Ser Ile Pro Leu Phe Ser Ser Leu Ser Ile
            20                  25                  30
Val Ala Ala Glu Val Thr Leu Asp Ser Ser Asn Asn Ser Tyr Asp Gly
        35                  40                  45
Ser Asn Gly Thr Thr Phe Thr Val Phe Ser Thr Thr Asp Ala Ala Ala
    50                  55                  60
Gly Thr Thr Tyr Ser Leu Leu Ser Asp Val Ser Phe Gln Asn Ala Gly
65              70                  75                      80
Ala Leu Gly Ile Pro Leu Ala Ser Gly Cys Phe Leu Glu Ala Gly Gly
            85                  90                      95
Asp Leu Thr Phe Gln Gly Asn Gln His Ala Leu Lys Phe Ala Phe Ile
            100                 105                 110
Asn Ala Gly Ser Ser Ala Gly Thr Val Ala Ser Thr Ser Ala Ala Asp
        115                 120                 125
Lys Asn Leu Leu Phe Asn Asp Phe Ser Arg Leu Ser Ile Ile Ser Cys
    130                 135                 140
Pro Ser Leu Leu Leu Ser Pro Thr Gly Gln Cys Ala Leu Lys Ser Val
145                 150                 155                 160
Gly Asn Leu Ser Leu Thr Gly Asn Ser Gln Ile Ile Phe Thr Gln Asn
            165                 170                 175
Phe Ser Ser Asp Asn Gly Gly Val Ile Asn Thr Lys Asn Phe Leu Leu
        180                 185                 190
Ser Gly Thr Ser Gln Phe Ala Ser Phe Ser Arg Asn Gln Ala Phe Thr
    195                 200                 205
Gly Lys Gln Gly Gly Val Val Tyr Ala Thr Gly Thr Ile Thr Ile Glu
    210                 215                 220
Asn Ser Pro Gly Ile Val Ser Phe Ser Gln Asn Leu Ala Lys Gly Ser
225                 230                 235                 240
Gly Gly Ala Leu Tyr Ser Thr Asp Asn Cys Ser Ile Thr Asp Asn Phe
            245                 250                 255
Gln Val Ile Phe Asp Gly Asn Ser Ala Trp Glu Ala Ala Gln Ala Gln
            260                 265                 270
Gly Gly Ala Ile Cys Cys Thr Thr Thr Asp Lys Thr Val Thr Leu Thr
    275                 280                     285
Gly Asn Lys Asn Leu Ser Phe Thr Asn Asn Thr Ala Leu Thr Tyr Gly
    290                 295                 300
Gly Ala Ile Ser Gly Leu Lys Val Ser Ile Ser Ala Gly Gly Pro Thr
305                 310                 315                 320
Leu Phe Gln Ser Asn Ile Ser Gly Ser Ser Ala Gly Gln Gly Gly Gly
            325                 330                 335
Gly Ala Ile Asn Ile Ala Ser Ala Gly Glu Leu Ala Leu Ser Ala Thr
            340                 345                 350
Ser Gly Asp Ile Thr Phe Asn Asn Asn Gln Val Thr Asn Gly Ser Thr
    355                 360                 365
Ser Thr Arg Asn Ala Ile Asn Ile Ile Asp Thr Ala Lys Val Thr Ser
    370                 375                 380
Ile Arg Ala Ala Thr Gly Gln Ser Ile Tyr Phe Tyr Asp Pro Ile Thr
385                 390                 395                 400
Asn Pro Gly Thr Ala Ala Ser Thr Asp Thr Leu Asn Leu Asn Leu Ala
            405                 410                 415
Asp Ala Asn Ser Glu Ile Glu Tyr Gly Gly Ala Ile Val Phe Ser Gly
        420                 425                 430
Glu Lys Leu Ser Pro Thr Glu Lys Ala Ile Ala Ala Asn Val Thr Ser
    435                 440                 445
Thr Ile Arg Gln Pro Ala Val Leu Ala Arg Gly Asp Leu Val Leu Arg
    450                 455                 460
Asp Gly Val Thr Val Thr Phe Lys Asp Leu Thr Gln Ser Pro Gly Ser
465                 470                 475                 480
```

710

```
Arg Ile Leu Met Asp Gly Gly Thr Thr Leu Ser Ala Lys Glu Ala Asn
            485                   490                   495
Leu Ser Leu Asn Gly Leu Ala Val Asn Leu Ser Ser Leu Asp Gly Thr
            500                   505                   510
Asn Lys Ala Ala Leu Lys Thr Glu Ala Ala Asp Lys Asn Ile Ser Leu
            515                   520                   525
Ser Gly Thr Ile Ala Leu Ile Asp Thr Glu Gly Ser Phe Tyr Glu Asn
            530                   535                   540
His Asn Leu Lys Ser Ala Ser Thr Tyr Pro Leu Leu Glu Leu Thr Thr
545                   550                   555                   560
Ala Gly Ala Asn Gly Thr Ile Thr Leu Gly Ala Leu Ser Thr Leu Thr
            565                   570                   575
Leu Gln Glu Pro Glu Thr His Tyr Gly Tyr Gln Gly Asn Trp Gln Leu
            580                   585                   590
Ser Trp Ala Asn Ala Thr Ser Ser Lys Ile Gly Ser Ile Asn Trp Thr
            595                   600                   605
Arg Thr Gly Tyr Ile Pro Ser Pro Glu Arg Lys Ser Asn Leu Pro Leu
    610                   615                   620
Asn Ser Leu Trp Gly Asn Phe Ile Asp Ile Arg Ser Ile Asn Gln Leu
625                   630                   635                   640
Ile Glu Thr Lys Ser Ser Gly Glu Pro Phe Glu Arg Glu Leu Trp Leu
            645                   650                   655
Ser Gly Ile Ala Asn Phe Phe Tyr Arg Asp Ser Met Pro Thr Arg His
            660                   665                   670
Gly Phe Arg His Ile Ser Gly Gly Tyr Ala Leu Gly Ile Thr Ala Thr
            675                   680                   685
Thr Pro Ala Glu Asp Gln Leu Thr Phe Ala Phe Cys Gln Leu Phe Ala
    690                   695                   700
Arg Asp Arg Asn His Ile Thr Gly Lys Asn His Gly Asp Thr Tyr Gly
705                   710                   715                   720
Ala Ser Leu Tyr Phe His His Thr Glu Gly Leu Phe Asp Ile Ala Asn
            725                   730                   735
Phe Leu Trp Gly Lys Ala Thr Arg Ala Pro Trp Val Leu Ser Glu Ile
            740                   745                   750
Ser Gln Ile Ile Pro Leu Ser Phe Asp Ala Lys Phe Ser Tyr Leu His
            755                   760                   765
Thr Asp Asn His Met Lys Thr Tyr Tyr Thr Asp Asn Ser Ile Ile Lys
    770                   775                   780
Gly Ser Trp Arg Asn Asp Ala Phe Cys Ala Asp Leu Gly Ala Ser Leu
785                   790                   795                   800
Pro Phe Val Ile Ser Val Pro Tyr Leu Leu Lys Glu Val Glu Pro Phe
            805                   810                   815
Val Lys Val Gln Tyr Ile Tyr Ala His Gln Gln Asp Phe Tyr Glu Arg
            820                   825                   830
His Ala Glu Gly Arg Ala Phe Asn Lys Ser Glu Leu Ile Asn Val Glu
            835                   840                   845
Ile Pro Ile Gly Val Thr Phe Glu Arg Asp Ser Lys Ser Glu Lys Gly
    850                   855                   860
Thr Tyr Asp Leu Thr Leu Met Tyr Ile Leu Asp Ala Tyr Arg Arg Asn
865                   870                   875                   880
Pro Lys Cys Gln Thr Ser Leu Ile Ala Ser Asp Ala Asn Trp Met Ala
            885                   890                   895
Tyr Gly Thr Asn Leu Ala Arg Gln Gly Phe Ser Val Arg Ala Ala Asn
            900                   905                   910
His Phe Gln Val Asn Pro His Met Glu Ile Phe Gly Gln Phe Ala Phe
            915                   920                   925
Glu Val Arg Ser Ser Ser Arg Asn Tyr Asn Thr Asn Leu Gly Ser Lys
    930                   935                   940
Phe Cys Phe
945
```

<210> 448
<211> 938
<212> PRT
<213> Chlamydia pneumoniae

<400> 448

```
Leu Ile Glu Pro Lys His Leu Ser Met Lys Ile Pro Leu His Lys Leu
1               5                   10                  15
Leu Ile Ser Ser Thr Leu Val Thr Pro Ile Leu Leu Ser Ile Ala Thr
            20                  25                  30
Tyr Gly Ala Asp Ala Ser Leu Ser Pro Thr Asp Ser Phe Asp Gly Ala
        35                  40                  45
Gly Gly Ser Thr Phe Thr Pro Lys Ser Thr Ala Asp Ala Asn Gly Thr
    50                  55                  60
Asn Tyr Val Leu Ser Gly Asn Val Tyr Ile Asn Asp Ala Gly Lys Gly
65                  70                  75                  80
Thr Ala Leu Thr Gly Cys Cys Phe Thr Glu Thr Thr Gly Asp Leu Thr
                85                  90                  95
Phe Thr Gly Lys Gly Tyr Ser Phe Ser Phe Asn Thr Val Asp Ala Gly
            100                 105                 110
Ser Asn Ala Gly Ala Ala Ala Ser Thr Thr Ala Asp Lys Ala Leu Thr
        115                 120                 125
Phe Thr Gly Phe Ser Asn Leu Ser Phe Ile Ala Ala Pro Gly Thr Thr
    130                 135                 140
Val Ala Ser Gly Lys Ser Thr Leu Ser Ser Ala Gly Ala Leu Asn Leu
145                 150                 155                 160
Thr Asp Asn Gly Thr Ile Leu Phe Ser Gln Asn Val Ser Asn Glu Ala
                165                 170                 175
Asn Asn Asn Gly Gly Ala Ile Thr Thr Lys Thr Leu Ser Ile Ser Gly
            180                 185                 190
Asn Thr Ser Ser Ile Thr Phe Thr Ser Asn Ser Ala Lys Lys Leu Gly
        195                 200                 205
Gly Ala Ile Tyr Ser Ser Ala Ala Ala Ser Ile Ser Gly Asn Thr Gly
    210                 215                 220
Gln Leu Val Phe Met Asn Asn Lys Gly Glu Thr Gly Gly Gly Ala Leu
225                 230                 235                 240
Gly Phe Glu Ala Ser Ser Ser Ile Thr Gln Asn Ser Ser Leu Phe Phe
                245                 250                 255
Ser Gly Asn Thr Ala Thr Asp Ala Ala Gly Lys Gly Gly Ala Ile Tyr
            260                 265                 270
Cys Glu Lys Thr Gly Glu Thr Pro Thr Leu Thr Ile Ser Gly Asn Lys
    275                 280                 285
Ser Leu Thr Phe Ala Glu Asn Ser Ser Val Thr Gln Gly Gly Ala Ile
    290                 295                 300
Cys Ala His Gly Leu Asp Leu Ser Ala Ala Gly Pro Thr Leu Phe Ser
305                 310                 315                 320
Asn Asn Arg Cys Gly Asn Thr Ala Ala Gly Lys Gly Gly Ala Ile Ala
            325                 330                 335
Ile Ala Asp Ser Gly Ser Leu Ser Leu Ser Ala Asn Gln Gly Asp Ile
            340                 345                 350
Thr Phe Leu Gly Asn Thr Leu Thr Ser Thr Ser Ala Pro Thr Ser Thr
        355                 360                 365
Arg Asn Ala Ile Tyr Leu Gly Ser Ser Ala Lys Ile Thr Asn Leu Arg
    370                 375                 380
Ala Ala Gln Gly Gln Ser Ile Tyr Phe Tyr Asp Pro Ile Ala Ser Asn
385                 390                 395                 400
Thr Thr Gly Ala Ser Asp Val Leu Thr Ile Asn Gln Pro Asp Ser Asn
                405                 410                 415
Ser Pro Leu Asp Tyr Ser Gly Thr Ile Val Phe Ser Gly Glu Lys Leu
            420                 425                 430
```

712

```
Ser Ala Asp Glu Ala Lys Ala Ala Asp Asn Phe Thr Ser Ile Leu Lys
        435             440             445
Gln Pro Leu Ala Leu Ala Ser Gly Thr Leu Ala Leu Lys Gly Asn Val
        450             455             460
Glu Leu Asp Val Asn Gly Phe Thr Gln Thr Glu Gly Ser Thr Leu Leu
465             470             475             480
Met Gln Pro Gly Thr Lys Leu Lys Ala Asp Thr Glu Ala Ile Ser Leu
            485             490             495
Thr Lys Leu Val Val Asp Leu Ser Ala Leu Glu Gly Asn Lys Ser Val
        500             505             510
Ser Ile Glu Thr Ala Gly Ala Asn Lys Thr Ile Thr Leu Thr Ser Pro
        515             520             525
Leu Val Phe Gln Asp Ser Ser Gly Asn Phe Tyr Glu Ser His Thr Ile
        530             535             540
Asn Gln Ala Phe Thr Gln Pro Leu Val Val Phe Thr Ala Ala Thr Ala
545             550             555             560
Ala Ser Asp Ile Tyr Ile Asp Ala Leu Leu Thr Ser Pro Val Gln Thr
                565             570             575
Pro Glu Pro His Tyr Gly Tyr Gln Gly His Trp Glu Ala Thr Trp Ala
            580             585             590
Asp Thr Ser Thr Ala Lys Ser Gly Thr Met Thr Trp Val Thr Thr Gly
            595             600             605
Tyr Asn Pro Asn Pro Glu Arg Arg Ala Ser Val Val Pro Asp Ser Leu
        610             615             620
Trp Ala Ser Phe Thr Asp Ile Arg Thr Leu Gln Gln Ile Met Thr Ser
625             630             635             640
Gln Ala Asn Ser Ile Tyr Gln Gln Arg Gly Leu Trp Ala Ser Gly Thr
            645             650             655
Ala Asn Phe Phe His Lys Asp Lys Ser Gly Thr Asn Gln Ala Phe Arg
            660             665             670
His Lys Ser Tyr Gly Tyr Ile Val Gly Gly Ser Ala Glu Asp Phe Ser
        675             680             685
Glu Asn Ile Phe Ser Val Ala Phe Cys Gln Leu Phe Gly Lys Asp Lys
        690             695             700
Asp Leu Phe Ile Val Glu Asn Thr Ser His Asn Tyr Leu Ala Ser Leu
705             710             715             720
Tyr Leu Gln His Arg Ala Phe Leu Gly Gly Leu Pro Met Pro Ser Phe
            725             730             735
Gly Ser Ile Thr Asp Met Leu Lys Asp Ile Pro Leu Ile Leu Asn Ala
            740             745             750
Gln Leu Ser Tyr Ser Tyr Thr Lys Asn Asp Met Asp Thr Arg Tyr Thr
            755             760             765
Ser Tyr Pro Glu Ala Gln Gly Ser Trp Thr Asn Asn Ser Gly Ala Leu
770             775             780
Glu Leu Gly Gly Ser Leu Ala Leu Tyr Leu Pro Lys Glu Ala Pro Phe
785             790             795             800
Phe Gln Gly Tyr Phe Pro Phe Leu Lys Phe Gln Ala Val Tyr Ser Arg
            805             810             815
Gln Gln Asn Phe Lys Glu Ser Gly Ala Glu Ala Arg Ala Phe Asp Asp
            820             825             830
Gly Asp Leu Val Asn Cys Ser Ile Pro Val Gly Ile Arg Leu Glu Lys
            835             840             845
Ile Ser Glu Asp Glu Lys Asn Asn Phe Glu Ile Ser Leu Ala Tyr Ile
        850             855             860
Gly Asp Val Tyr Arg Lys Asn Pro Arg Ser Arg Thr Ser Leu Met Val
865             870             875             880
Ser Gly Ala Ser Trp Thr Ser Leu Cys Lys Asn Leu Ala Arg Gln Ala
            885             890             895
Phe Leu Ala Ser Ala Gly Ser His Leu Thr Leu Ser Pro His Val Glu
        900             905             910
```

713

```
Leu Ser Gly Glu Ala Ala Tyr Glu Leu Arg Gly Ser Ala His Ile Tyr
        915                 920             925
Asn Val Asp Cys Gly Leu Arg Tyr Ser Phe
    930                 935


    <210> 449
    <211> 937
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 449
Phe Val Lys Pro Pro Ile Ala Leu Tyr Met Lys Ser Ser Leu His Trp
  1             5                 10                  15
Phe Leu Ile Ser Ser Ser Leu Ala Leu Pro Leu Ser Leu Asn Phe Ser
            20              25              30
Ala Phe Ala Ala Val Val Glu Ile Asn Leu Gly Pro Thr Asn Ser Phe
        35              40              45
Ser Gly Pro Gly Thr Tyr Thr Pro Pro Ala Gln Thr Thr Asn Ala Asp
    50              55              60
Gly Thr Ile Tyr Asn Leu Thr Gly Asp Val Ser Ile Thr Asn Ala Gly
65              70              75              80
Ser Pro Thr Ala Leu Thr Ala Ser Cys Phe Lys Glu Thr Thr Gly Asn
            85              90              95
Leu Ser Phe Gln Gly His Gly Tyr Gln Phe Leu Leu Gln Asn Ile Asp
            100             105             110
Ala Gly Ala Asn Cys Thr Phe Thr Asn Thr Ala Ala Asn Lys Leu Leu
        115             120             125
Ser Phe Ser Gly Phe Ser Tyr Leu Ser Leu Ile Gln Thr Thr Asn Ala
    130             135             140
Thr Thr Gly Thr Gly Ala Ile Lys Ser Thr Gly Ala Cys Ser Ile Gln
145             150             155             160
Ser Asn Tyr Ser Cys Tyr Phe Gly Gln Asn Phe Ser Asn Asp Asn Gly
            165             170             175
Gly Ala Leu Gln Gly Ser Ser Ile Ser Leu Ser Leu Asn Pro Asn Leu
            180             185             190
Thr Phe Ala Lys Asn Lys Ala Thr Gln Lys Gly Gly Ala Leu Tyr Ser
            195             200             205
Thr Gly Gly Ile Thr Ile Asn Asn Thr Leu Asn Ser Ala Ser Phe Ser
    210             215             220
Glu Asn Thr Ala Ala Asn Asn Gly Gly Ala Ile Tyr Thr Glu Ala Ser
225             230             235             240
Ser Phe Ile Ser Ser Asn Lys Ala Ile Ser Phe Ile Asn Asn Ser Val
            245             250             255
Thr Ala Thr Ser Ala Thr Gly Gly Ala Ile Tyr Cys Ser Ser Thr Ser
            260             265             270
Ala Pro Lys Pro Val Leu Thr Leu Ser Asp Asn Gly Glu Leu Asn Phe
    275             280             285
Ile Gly Asn Thr Ala Ile Thr Ser Gly Gly Ala Ile Tyr Thr Asp Asn
    290             295             300
Leu Val Leu Ser Ser Gly Gly Pro Thr Leu Phe Lys Asn Asn Ser Ala
305             310             315             320
Ile Asp Thr Ala Ala Pro Leu Gly Gly Ala Ile Ala Ile Ala Asp Ser
            325             330             335
Gly Ser Leu Ser Leu Ser Ala Leu Gly Gly Asp Ile Thr Phe Glu Gly
            340             345             350
Asn Thr Val Val Lys Gly Ala Ser Ser Ser Gln Thr Thr Thr Arg Asn
            355             360             365
Ser Ile Asn Ile Gly Asn Thr Asn Ala Lys Ile Val Gln Leu Arg Ala
    370             375             380
Ser Gln Gly Asn Thr Ile Tyr Phe Tyr Asp Pro Ile Thr Thr Ser Ile
385             390             395             400
```

714

```
Thr Ala Ala Leu Ser Asp Ala Leu Asn Leu Asn Gly Pro Asp Leu Ala
            405             410             415
Gly Asn Pro Ala Tyr Gln Gly Thr Ile Val Phe Ser Gly Glu Lys Leu
        420             425             430
Ser Glu Ala Glu Ala Ala Glu Ala Asp Asn Leu Lys Ser Thr Ile Gln
        435             440             445
Gln Pro Leu Thr Leu Ala Gly Gln Leu Ser Leu Lys Ser Gly Val
450             455             460
Thr Leu Val Ala Lys Ser Phe Ser Gln Ser Pro Gly Ser Thr Leu Leu
465             470             475             480
Met Asp Ala Gly Thr Thr Leu Glu Thr Ala Asp Gly Ile Thr Ile Asn
            485             490             495
Asn Leu Val Leu Asn Val Asp Ser Leu Lys Glu Thr Lys Lys Ala Thr
        500             505             510
Leu Lys Ala Thr Gln Ala Ser Gln Thr Val Thr Leu Ser Gly Ser Leu
    515             520             525
Ser Leu Val Asp Pro Ser Gly Asn Val Tyr Glu Asp Val Ser Trp Asn
    530             535             540
Asn Pro Gln Val Phe Ser Cys Leu Thr Leu Thr Ala Asp Asp Pro Ala
545             550             555             560
Asn Ile His Ile Thr Asp Leu Ala Ala Asp Pro Leu Glu Lys Asn Pro
            565             570             575
Ile His Trp Gly Tyr Gln Gly Asn Trp Ala Leu Ser Trp Gln Glu Asp
        580             585             590
Thr Ala Thr Lys Ser Lys Ala Ala Thr Leu Thr Trp Thr Lys Thr Gly
        595             600             605
Tyr Asn Pro Asn Pro Glu Arg Arg Gly Thr Leu Val Ala Asn Thr Leu
    610             615             620
Trp Gly Ser Phe Val Asp Val Arg Ser Ile Gln Gln Leu Val Ala Thr
625             630             635             640
Lys Val Arg Gln Ser Gln Glu Thr Arg Gly Ile Trp Cys Glu Gly Ile
            645             650             655
Ser Asn Phe Phe His Lys Asp Ser Thr Lys Ile Asn Lys Gly Phe Arg
            660             665             670
His Ile Ser Ala Gly Tyr Val Val Gly Ala Thr Thr Thr Leu Ala Ser
            675             680             685
Asp Asn Leu Ile Thr Ala Ala Phe Cys Gln Leu Phe Gly Lys Asp Arg
    690             695             700
Asp His Phe Ile Asn Lys Asn Arg Ala Ser Ala Tyr Ala Ala Ser Leu
705             710             715             720
His Leu Gln His Leu Ala Thr Leu Ser Ser Pro Ser Leu Leu Arg Tyr
            725             730             735
Leu Pro Gly Ser Glu Ser Glu Gln Pro Val Leu Phe Asp Ala Gln Ile
            740             745             750
Ser Tyr Ile Tyr Ser Lys Asn Thr Met Lys Thr Tyr Tyr Thr Gln Ala
            755             760             765
Pro Lys Gly Glu Ser Ser Trp Tyr Asn Asp Gly Cys Ala Leu Glu Leu
    770             775             780
Ala Ser Ser Leu Pro His Thr Ala Leu Ser His Glu Gly Leu Phe His
785             790             795             800
Ala Tyr Phe Pro Phe Ile Lys Val Glu Ala Ser Tyr Ile His Gln Asp
            805             810             815
Ser Phe Lys Glu Arg Asn Thr Thr Leu Val Arg Ser Phe Asp Ser Gly
        820             825             830
Asp Leu Ile Asn Val Ser Val Pro Ile Gly Ile Thr Phe Glu Arg Phe
    835             840             845
Ser Arg Asn Glu Arg Ala Ser Tyr Glu Ala Thr Val Ile Tyr Val Ala
    850             855             860
Asp Val Tyr Arg Lys Asn Pro Asp Cys Thr Thr Ala Leu Leu Ile Asn
865             870             875             880
```

                                    715

```
Asn Thr Ser Trp Lys Thr Thr Gly Thr Asn Leu Ser Arg Gln Ala Gly
                885                     890                 895
Ile Gly Arg Ala Gly Ile Phe Tyr Ala Phe Ser Pro Asn Leu Glu Val
            900                 905                 910
Thr Ser Asn Leu Ser Met Glu Ile Arg Gly Ser Ser Arg Ser Tyr Asn
            915                 920                 925
Ala Asp Leu Gly Gly Lys Phe Gln Phe
    930                 935


            <210> 450
            <211> 393
            <212> PRT
            <213> Chlamydia pneumoniae


            <400> 450
Phe Ile Gln Pro Ser Arg Arg Glu Ile His Glu Trp Lys Cys Ile Leu
1               5                   10                  15
Leu Gly Ser Ser Leu Arg Met Glu Met Met Ser Pro Phe Gln Gln Pro
                20              25                  30
Glu Gln Cys His Phe Asp Val Val Gly Ser Phe Leu Arg Pro Glu Ser
            35              40                  45
Leu Thr Arg Ala Arg Ser Asp Phe Glu Glu Gly Arg Ile Val Tyr Glu
    50              55                  60
Gln Met Arg Val Val Glu Asp Ala Ala Ile Arg Asn Leu Ile Lys Lys
65                  70                  75                  80
Gln Thr Glu Ala Gly Leu Ile Phe Phe Thr Asp Gly Glu Phe Arg Arg
                85                  90                  95
Tyr Ser Trp Asp Phe Asp Phe Met Trp Gly Phe His Gly Val Asp Arg
            100                 105                 110
Arg Arg Asp Ser Asn Asp Pro Glu Ile Gly Val Tyr Leu Lys Asp Lys
            115                 120                 125
Ile Ser Val Ser Lys His Pro Phe Ile Glu His Phe Glu Phe Val Lys
    130                 135                 140
Thr Phe Glu Lys Gly Asn Ala Lys Ala Lys Gln Thr Ile Pro Ser Pro
145                 150                 155                 160
Ser Gln Phe Phe His Glu Met Ile Phe Ala Pro Asn Leu Lys Asn Thr
                165                 170                 175
Arg Lys Phe Tyr Pro Thr Asn Gln Glu Leu Ile Asp Asp Ile Val Phe
            180                 185                 190
Tyr Tyr Arg Gln Val Ile Gln Asp Leu Tyr Ala Ala Gly Cys Arg Asn
            195                 200                 205
Leu Gln Leu Asp Asp Cys Ala Trp Cys Arg Leu Leu Asp Ile Arg Ala
    210                 215                 220
Pro Ser Trp Tyr Gly Val Asp Ser His Asp Arg Leu Gln Glu Ile Leu
225                 230                 235                 240
Glu Gln Phe Leu Trp Ile His Asn Leu Val Met Lys Asp Arg Pro Glu
                245                 250                 255
Asp Leu Phe Val Ser Leu His Val Cys Arg Gly Asp Tyr Gln Ala Glu
            260                 265                 270
Phe Phe Ser Arg Arg Ala Tyr Asp Ser Ile Glu Glu Pro Leu Phe Ala
            275                 280                 285
Lys Thr Asp Val Asp Ser Tyr His Tyr Tyr Trp Ala Leu Asp Asp Lys
    290                 295                 300
Tyr Ser Gly Gly Ala Glu Pro Leu Ala Tyr Val Ser Gly Glu Lys His
305                 310                 315                 320
Val Cys Leu Gly Leu Ile Ser Ser Asn His Ser Cys Ile Glu Asp Arg
                325                 330                 335
Asp Ala Val Val Ser Arg Ile Tyr Glu Ala Ala Ser Tyr Ile Pro Leu
            340                 345                 350
Glu Arg Leu Ser Leu Ser Pro Gln Cys Gly Phe Ala Ser Cys Glu Gly
    355                 360                 365
```

716

```
Asp His Arg Met Thr Glu Glu Glu Gln Trp Lys Lys Ile Ala Phe Val
    370                 375                 380
Lys Glu Ile Ala Lys Glu Ile Trp Gly
385                 390


        <210> 451
        <211> 634
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 451
Glu Ala Tyr Thr Gly Phe Arg Gly Gly Gly Gly Ile Ser Phe Ser Asn
  1               5                 10                  15
Asn Ile Val Gln Gly Thr Thr Ala Gly Asn Gly Gly Ala Ile Ser Ile
            20                  25                  30
Leu Ala Ala Gly Glu Cys Ser Leu Ser Ala Glu Ala Gly Asp Ile Thr
        35                  40                  45
Phe Asn Gly Asn Ala Ile Val Ala Thr Thr Pro Gln Thr Thr Lys Arg
        50                  55                  60
Asn Ser Ile Asp Ile Gly Ser Thr Ala Lys Ile Thr Asn Leu Arg Ala
65                  70                  75                  80
Ile Ser Gly His Ser Ile Phe Phe Tyr Asp Pro Ile Thr Ala Asn Thr
            85                  90                  95
Ala Ala Asp Ser Thr Asp Thr Leu Asn Leu Asn Lys Ala Asp Ala Gly
            100                 105                 110
Asn Ser Thr Asp Tyr Ser Gly Ser Ile Val Phe Ser Gly Glu Lys Leu
            115                 120                 125
Ser Glu Asp Glu Ala Lys Val Ala Asp Asn Leu Thr Ser Thr Leu Lys
            130                 135                 140
Gln Pro Val Thr Leu Thr Ala Gly Asn Leu Val Leu Lys Arg Gly Val
145                 150                 155                 160
Thr Leu Asp Thr Lys Gly Phe Thr Gln Thr Ala Gly Ser Ser Val Ile
                165                 170                 175
Met Asp Ala Gly Thr Thr Leu Lys Ala Ser Thr Glu Glu Val Thr Leu
            180                 185                 190
Thr Gly Leu Ser Ile Pro Val Asp Ser Leu Gly Glu Gly Lys Lys Val
            195                 200                 205
Val Ile Ala Ala Ser Ala Ala Ser Lys Asn Val Ala Leu Ser Gly Pro
    210                 215                 220
Ile Leu Leu Leu Asp Asn Gln Gly Asn Ala Tyr Glu Asn His Asp Leu
225                 230                 235                 240
Gly Lys Thr Gln Asp Phe Ser Phe Val Gln Leu Ser Ala Leu Gly Thr
                245                 250                 255
Ala Thr Thr Thr Asp Val Pro Ala Val Pro Thr Val Ala Thr Pro Thr
                260                 265                 270
His Tyr Gly Tyr Gln Gly Thr Trp Gly Met Thr Trp Val Asp Asp Thr
            275                 280                 285
Ala Ser Thr Pro Lys Thr Lys Thr Ala Thr Leu Ala Trp Thr Asn Thr
    290                 295                 300
Gly Tyr Leu Pro Asn Pro Glu Arg Gln Gly Pro Leu Val Pro Asn Ser
305                 310                 315                 320
Leu Trp Gly Ser Phe Ser Asp Ile Gln Ala Ile Gln Gly Val Ile Glu
                325                 330                 335
Arg Ser Ala Leu Thr Leu Cys Ser Asp Arg Gly Phe Trp Ala Ala Gly
            340                 345                 350
Val Ala Asn Phe Leu Asp Lys Asp Lys Lys Gly Glu Lys Arg Lys Tyr
            355                 360                 365
Arg His Lys Ser Gly Gly Tyr Ala Ile Gly Gly Ala Ala Gln Thr Cys
    370                 375                 380
Ser Glu Asn Leu Ile Ser Phe Ala Phe Cys Gln Leu Phe Gly Ser Asp
385                 390                 395                 400
```

```
Lys Asp Phe Leu Val Ala Lys Asn His Thr Asp Thr Tyr Ala Gly Ala
            405             410             415
Phe Tyr Ile Gln His Ile Thr Glu Cys Ser Gly Phe Ile Gly Cys Leu
            420             425             430
Leu Asp Lys Leu Pro Gly Ser Trp Ser His Lys Pro Leu Val Leu Glu
        435             440             445
Gly Gln Leu Ala Tyr Ser His Val Ser Asn Asp Leu Lys Thr Lys Tyr
    450             455             460
Thr Ala Tyr Pro Glu Val Lys Gly Ser Trp Gly Asn Asn Ala Phe Asn
465             470             475             480
Met Met Leu Gly Ala Ser Ser His Ser Tyr Pro Glu Tyr Leu His Cys
            485             490             495
Phe Asp Thr Tyr Ala Pro Tyr Ile Lys Leu Asn Leu Thr Tyr Ile Arg
            500             505             510
Gln Asp Ser Phe Ser Glu Lys Gly Thr Glu Gly Arg Ser Phe Asp Asp
        515             520             525
Ser Asn Leu Phe Asn Leu Ser Leu Pro Ile Gly Val Lys Phe Glu Lys
    530             535             540
Phe Ser Asp Cys Asn Asp Phe Ser Tyr Asp Leu Thr Leu Ser Tyr Val
545             550             555             560
Pro Asp Leu Ile Arg Asn Asp Pro Lys Cys Thr Thr Ala Leu Val Ile
            565             570             575
Ser Gly Ala Ser Trp Glu Thr Tyr Ala Asn Asn Leu Ala Arg Gln Ala
            580             585             590
Leu Gln Val Arg Ala Gly Ser His Tyr Ala Phe Ser Pro Met Phe Glu
        595             600             605
Val Leu Gly Gln Phe Val Phe Glu Val Arg Gly Ser Ser Arg Ile Tyr
    610             615             620
Asn Val Asp Leu Gly Gly Lys Phe Gln Phe
625             630
```

        <210> 452
        <211> 314
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 452

```
Ser Gly Phe Met Lys Ser Gln Phe Ser Trp Leu Val Leu Ser Ser Thr
1           5               10              15
Leu Ala Cys Phe Thr Ser Cys Ser Thr Val Phe Ala Ala Thr Ala Glu
            20              25              30
Asn Ile Gly Pro Ser Asp Ser Phe Asp Gly Ser Thr Asn Thr Gly Thr
        35              40              45
Tyr Thr Pro Lys Asn Thr Thr Thr Gly Ile Asp Tyr Thr Leu Thr Gly
    50              55              60
Asp Ile Thr Leu Gln Asn Leu Gly Asp Ser Ala Ala Leu Thr Lys Gly
65              70              75              80
Cys Phe Ser Asp Thr Thr Glu Ser Leu Ser Phe Ala Gly Lys Gly Tyr
            85              90              95
Ser Leu Ser Phe Leu Asn Ile Lys Ser Ser Ala Glu Gly Ala Ala Leu
            100             105             110
Ser Val Thr Thr Asp Lys Asn Leu Ser Leu Thr Gly Phe Ser Ser Leu
    115             120             125
Thr Phe Leu Ala Ala Pro Ser Ser Val Ile Thr Thr Pro Ser Gly Lys
    130             135             140
Gly Ala Val Lys Cys Gly Gly Asp Leu Thr Phe Asp Asn Asn Gly Thr
145             150             155             160
Ile Leu Phe Lys Gln Asp Tyr Cys Glu Glu Asn Gly Gly Ala Ile Ser
            165             170             175
Thr Lys Asn Leu Ser Leu Lys Asn Ser Thr Gly Ser Ile Ser Phe Glu
        180             185             190
```

                            718

```
Gly Asn Lys Ser Ser Ala Thr Gly Lys Lys Gly Gly Ala Ile Cys Ala
        195                 200                 205
Thr Gly Thr Val Asp Ile Thr Asn Asn Thr Ala Pro Thr Leu Phe Ser
    210                 215                 220
Asn Asn Ile Ala Glu Ala Ala Gly Gly Ala Ile Asn Ser Thr Gly Asn
225                 230                 235                 240
Cys Thr Ile Thr Gly Asn Thr Ser Leu Val Phe Ser Glu Asn Ser Val
            245                 250                 255
Thr Ala Thr Ala Gly Asn Gly Gly Ala Leu Ser Gly Asp Ala Asp Val
            260                 265                 270
Thr Ile Ser Gly Asn Gln Ser Val Thr Phe Ser Gly Asn Gln Ala Val
        275                 280                 285
Ala Asn Gly Gly Ala Ile Tyr Ala Lys Lys Leu Thr Leu Ala Ser Gly
    290                 295                 300
Gly Gly Gly Val Ser Pro Phe Leu Thr Ile
305                 310
```

<210> 453
<211> 967
<212> PRT
<213> Chlamydia pneumoniae

<400> 453
```
Lys Thr Gln Arg Val Lys Ile Lys Ile Leu Asp Ser Cys Phe Val Ile
1               5                   10                  15
Phe Asn Leu Ile Tyr Leu Phe Cys Phe Tyr Ile Asp Ala Asn Ser Ser
            20                  25                  30
Leu Lys Asn Lys Ser Ile Thr Met Lys Thr Ser Ile Pro Trp Val Leu
        35                  40                  45
Val Ser Ser Val Leu Ala Phe Ser Cys His Leu Gln Ser Leu Ala Asn
    50                  55                  60
Glu Glu Leu Leu Ser Pro Asp Asp Ser Phe Asn Gly Asn Ile Asp Ser
65                  70                  75                  80
Gly Thr Phe Thr Pro Lys Thr Ser Ala Thr Thr Tyr Ser Leu Thr Gly
            85                  90                  95
Asp Val Phe Phe Tyr Glu Pro Gly Lys Gly Thr Pro Leu Ser Asp Ser
            100                 105                 110
Cys Phe Lys Gln Thr Thr Asp Asn Leu Thr Phe Leu Gly Asn Gly His
        115                 120                 125
Ser Leu Thr Phe Gly Phe Ile Asp Ala Gly Thr His Ala Gly Ala Ala
    130                 135                 140
Ala Ser Thr Thr Ala Asn Lys Asn Leu Thr Phe Ser Gly Phe Ser Leu
145                 150                 155                 160
Leu Ser Phe Asp Ser Ser Pro Ser Thr Thr Val Thr Thr Gly Gln Gly
            165                 170                 175
Thr Leu Ser Ser Ala Gly Gly Val Asn Leu Glu Asn Ile Arg Lys Leu
            180                 185                 190
Val Val Ala Gly Asn Phe Ser Thr Ala Asp Gly Gly Ala Ile Lys Gly
    195                 200                 205
Ala Ser Phe Leu Leu Thr Gly Thr Ser Gly Asp Ala Leu Phe Ser Asn
    210                 215                 220
Asn Ser Ser Ser Thr Lys Gly Gly Ala Ile Ala Thr Thr Ala Gly Ala
225                 230                 235                 240
Arg Ile Ala Asn Asn Thr Gly Tyr Val Arg Phe Leu Ser Asn Ile Ala
            245                 250                 255
Ser Thr Ser Gly Gly Ala Ile Asp Asp Glu Gly Thr Ser Ile Leu Ser
            260                 265                 270
Asn Asn Lys Phe Leu Tyr Phe Glu Gly Asn Ala Ala Lys Thr Thr Gly
        275                 280                 285
Gly Ala Ile Cys Asn Thr Lys Ala Ser Gly Ser Pro Glu Leu Ile Ile
    290                 295                 300
```

719

Ser Asn Asn Lys Thr Leu Ile Phe Ala Ser Asn Val Ala Glu Thr Ser
305   310   315   320
Gly Gly Ala Ile His Ala Lys Lys Leu Ala Leu Ser Ser Gly Gly Phe
            325   330   335
Thr Glu Phe Leu Arg Asn Asn Val Ser Ser Ala Thr Pro Lys Gly Gly
            340   345   350
Ala Ile Ser Ile Asp Ala Ser Gly Glu Leu Ser Leu Ser Ala Glu Thr
        355   360   365
Gly Asn Ile Thr Phe Val Arg Asn Thr Leu Thr Thr Thr Gly Ser Thr
    370   375   380
Asp Thr Pro Lys Arg Asn Ala Ile Asn Ile Gly Ser Asn Gly Lys Phe
385   390   395   400
Thr Glu Leu Arg Ala Ala Lys Asn His Thr Ile Phe Phe Tyr Asp Pro
            405   410   415
Ile Thr Ser Glu Gly Thr Ser Ser Asp Val Leu Lys Ile Asn Asn Gly
        420   425   430
Ser Ala Gly Ala Leu Asn Pro Tyr Gln Gly Thr Ile Leu Phe Ser Gly
        435   440   445
Glu Thr Leu Thr Ala Asp Glu Leu Lys Val Ala Asp Asn Leu Lys Ser
    450   455   460
Ser Phe Thr Gln Pro Val Ser Leu Ser Gly Gly Lys Leu Leu Leu Gln
465   470   475   480
Lys Gly Val Thr Leu Glu Ser Thr Ser Phe Ser Gln Glu Ala Gly Ser
            485   490   495
Leu Leu Gly Met Asp Ser Gly Thr Thr Leu Ser Thr Thr Ala Gly Ser
            500   505   510
Ile Thr Ile Thr Asn Leu Gly Ile Asn Val Asp Ser Leu Gly Leu Lys
        515   520   525
Gln Pro Val Ser Leu Thr Ala Lys Gly Ala Ser Asn Lys Val Ile Val
    530   535   540
Ser Gly Lys Leu Asn Leu Ile Asp Ile Glu Gly Asn Ile Tyr Glu Ser
545   550   555   560
His Met Phe Ser His Asp Gln Leu Phe Ser Leu Leu Lys Ile Thr Val
            565   570   575
Asp Ala Asp Val Asp Thr Asn Val Asp Ile Ser Ser Leu Ile Pro Val
            580   585   590
Pro Ala Glu Asp Pro Asn Ser Glu Tyr Gly Phe Gln Gly Gln Trp Asn
    595   600   605
Val Asn Trp Thr Thr Asp Thr Ala Thr Asn Thr Lys Glu Ala Thr Ala
    610   615   620
Thr Trp Thr Lys Thr Gly Phe Val Pro Ser Pro Glu Arg Lys Ser Ala
625   630   635   640
Leu Val Cys Asn Thr Leu Trp Gly Val Phe Thr Asp Ile Arg Ser Leu
            645   650   655
Gln Gln Leu Val Glu Ile Gly Ala Thr Gly Met Glu His Lys Gln Gly
            660   665   670
Phe Trp Val Ser Ser Met Thr Asn Phe Leu His Lys Thr Gly Asp Glu
            675   680   685
Asn Arg Lys Gly Phe Arg His Thr Ser Gly Gly Tyr Val Ile Gly Gly
    690   695   700
Ser Ala His Thr Pro Lys Asp Asp Leu Phe Thr Phe Ala Phe Cys His
705   710   715   720
Leu Phe Ala Arg Asp Lys Asp Cys Phe Ile Ala His Asn Asn Ser Arg
            725   730   735
Thr Tyr Gly Gly Thr Leu Phe Phe Lys His Ser His Thr Leu Gln Pro
            740   745   750
Gln Asn Tyr Leu Arg Leu Gly Arg Ala Lys Phe Ser Glu Ser Ala Ile
            755   760   765
Glu Lys Phe Pro Arg Glu Ile Pro Leu Ala Leu Asp Val Gln Val Ser
    770   775   780

720

Phe Ser His Ser Asp Asn Arg Met Glu Thr His Tyr Thr Ser Leu Pro
785   790   795   800
Glu Ser Glu Gly Ser Trp Ser Asn Glu Cys Ile Ala Gly Gly Ile Gly
                805   810   815
Leu Asp Leu Pro Phe Val Leu Ser Asn Pro His Pro Leu Phe Lys Thr
            820   825   830
Phe Ile Pro Gln Met Lys Val Glu Met Val Tyr Val Ser Gln Asn Ser
            835   840   845
Phe Phe Glu Ser Ser Ser Asp Gly Arg Gly Phe Ser Ile Gly Arg Leu
        850   855   860
Leu Asn Leu Ser Ile Pro Val Gly Ala Lys Phe Val Gln Gly Asp Ile
865   870   875   880
Gly Asp Ser Tyr Thr Tyr Asp Leu Ser Gly Phe Phe Val Ser Asp Val
                885   890   895
Tyr Arg Asn Asn Pro Gln Ser Thr Ala Thr Leu Val Met Ser Pro Asp
            900   905   910
Ser Trp Lys Ile Arg Gly Gly Asn Leu Ser Arg Gln Ala Phe Leu Leu
        915   920   925
Arg Gly Ser Asn Asn Tyr Val Tyr Asn Ser Asn Cys Glu Leu Phe Gly
    930   935   940
His Tyr Ala Met Glu Leu Arg Gly Ser Ser Arg Asn Tyr Asn Val Asp
945   950   955   960
Val Gly Thr Lys Leu Arg Phe
                965

        <210> 454
        <211> 519
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 454
Phe Asn Glu Glu Thr Met Thr Ile Leu Arg Asn Phe Leu Thr Cys Ser
 1   5   10   15
Ala Leu Phe Leu Ala Leu Pro Ala Ala Ala Gln Val Val Tyr Leu His
            20   25   30
Glu Ser Asp Gly Tyr Asn Gly Ala Ile Asn Asn Lys Ser Leu Glu Pro
            35   40   45
Lys Ile Thr Cys Tyr Pro Glu Gly Thr Ser Tyr Ile Phe Leu Asp Asp
        50   55   60
Val Arg Ile Ser Asn Val Lys His Asp Gln Glu Asp Ala Gly Val Phe
65   70   75   80
Ile Asn Arg Ser Gly Asn Leu Phe Phe Met Gly Asn Arg Cys Asn Phe
                85   90   95
Thr Phe His Asn Leu Met Thr Glu Gly Phe Gly Ala Ala Ile Ser Asn
            100   105   110
Arg Val Gly Asp Thr Thr Leu Thr Leu Ser Asn Phe Ser Tyr Leu Ala
        115   120   125
Phe Thr Ser Ala Pro Leu Leu Pro Gln Gly Gln Gly Ala Ile Tyr Ser
        130   135   140
Leu Gly Ser Val Met Ile Glu Asn Ser Glu Glu Val Thr Phe Cys Gly
145   150   155   160
Asn Tyr Ser Ser Trp Ser Gly Ala Ala Ile Tyr Thr Pro Tyr Leu Leu
                165   170   175
Gly Ser Lys Ala Ser Arg Pro Ser Val Asn Leu Ser Gly Asn Arg Tyr
            180   185   190
Leu Val Phe Arg Asp Asn Val Ser Gln Gly Tyr Gly Gly Ala Ile Ser
        195   200   205
Thr His Asn Leu Thr Leu Thr Thr Arg Gly Pro Ser Cys Phe Glu Asn
    210   215   220
Asn His Ala Tyr His Asp Val Asn Ser Asn Gly Gly Ala Ile Ala Ile
225   230   235   240

```
Ala Pro Gly Gly Ser Ile Ser Ile Ser Val Lys Ser Gly Asp Leu Ile
            245                 250                 255
Phe Lys Gly Asn Thr Ala Ser Gln Asp Gly Asn Thr Ile His Asn Ser
            260                 265                 270
Ile His Leu Gln Ser Gly Ala Gln Phe Lys Asn Leu Arg Ala Val Ser
            275                 280                 285
Glu Ser Gly Val Tyr Phe Tyr Asp Pro Ile Ser His Ser Glu Ser His
    290                 295                 300
Lys Ile Thr Asp Leu Val Ile Asn Ala Pro Glu Gly Lys Glu Thr Tyr
305                 310                 315                 320
Glu Gly Thr Ile Ser Phe Ser Gly Leu Cys Leu Asp Asp His Glu Val
            325                 330                 335
Cys Ala Glu Asn Leu Thr Ser Thr Ile Leu Gln Asp Val Thr Leu Ala
            340                 345                 350
Gly Gly Thr Leu Ser Leu Ser Asp Gly Val Thr Leu Gln Leu His Ser
            355                 360                 365
Phe Lys Gln Glu Ala Ser Ser Thr Leu Thr Met Ser Pro Gly Thr Thr
            370                 375                 380
Leu Leu Cys Ser Gly Asp Ala Arg Val Gln Asn Leu His Ile Leu Ile
385                 390                 395                 400
Glu Asp Thr Asp Asn Phe Val Pro Val Arg Ile Arg Ala Glu Asp Lys
            405                 410                 415
Asp Ala Leu Val Ser Leu Glu Lys Leu Lys Val Ala Phe Glu Ala Tyr
            420                 425                 430
Trp Ser Val Tyr Asp Phe Pro Gln Phe Lys Glu Ala Phe Thr Ile Pro
            435                 440                 445
Leu Leu Glu Leu Leu Gly Pro Ser Phe Asp Ser Leu Leu Leu Gly Glu
    450                 455                 460
Thr Thr Leu Glu Arg Thr Gln Val Thr Thr Glu Asn Asp Ala Val Arg
465                 470                 475                 480
Gly Phe Trp Ser Leu Ser Trp Glu Glu Tyr Pro Pro Ser Leu Asp Lys
            485                 490                 495
Asp Arg Arg Ile Thr Pro Thr Lys Lys Thr Val Phe Leu Thr Trp Asn
            500                 505                 510
Pro Glu Ile Thr Ser Thr Pro
            515


        <210> 455
        <211> 999
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 455
Asn Cys Val Leu Leu Tyr Leu Phe Phe Tyr Ser Leu Ser Leu Ile Cys
1                   5                   10                  15
Arg Ile Ile Trp Phe His Leu Tyr Val Gln Met Lys Thr Ser Ile Arg
            20                  25                  30
Lys Phe Leu Ile Ser Thr Thr Leu Ala Pro Cys Phe Ala Ser Thr Ala
            35                  40                  45
Phe Thr Val Glu Val Ile Met Pro Ser Glu Asn Phe Asp Gly Ser Ser
    50                  55                  60
Gly Lys Ile Phe Pro Tyr Thr Thr Leu Ser Asp Pro Arg Gly Thr Leu
65                  70                  75                  80
Cys Ile Phe Ser Gly Asp Leu Tyr Ile Ala Asn Leu Asp Asn Ala Ile
            85                  90                  95
Ser Arg Thr Ser Ser Ser Cys Phe Ser Asn Arg Ala Gly Ala Leu Gln
            100                 105                 110
Ile Leu Gly Lys Gly Gly Val Phe Ser Phe Leu Asn Ile Arg Ser Ser
            115                 120                 125
Ala Asp Gly Ala Ala Ile Ser Ser Val Ile Thr Gln Asn Pro Glu Leu
            130                 135                 140
```

722

```
Cys Pro Leu Ser Phe Ser Gly Phe Ser Gln Met Ile Phe Asp Asn Cys
145             150                 155                 160
Glu Ser Leu Thr Ser Asp Thr Ser Ala Ser Asn Val Ile Pro His Ala
            165                 170                 175
Ser Ala Ile Tyr Ala Thr Thr Pro Met Leu Phe Thr Asn Asn Asp Ser
            180                 185                 190
Ile Leu Phe Gln Tyr Asn Arg Ser Ala Gly Phe Gly Ala Ala Ile Arg
            195                 200                 205
Gly Thr Ser Ile Thr Ile Glu Asn Thr Lys Lys Ser Leu Leu Phe Asn
            210                 215                 220
Gly Asn Gly Ser Ile Ser Asn Gly Gly Ala Leu Thr Gly Ser Ala Ala
225             230                 235                 240
Ile Asn Leu Ile Asn Asn Ser Ala Pro Val Ile Phe Ser Thr Asn Ala
            245                 250                 255
Thr Gly Ile Tyr Gly Gly Ala Ile Tyr Leu Thr Gly Gly Ser Met Leu
            260                 265                 270
Thr Ser Gly Asn Leu Ser Gly Val Leu Phe Val Asn Asn Ser Ser Arg
            275                 280                 285
Ser Gly Gly Ala Ile Tyr Ala Asn Gly Asn Val Thr Phe Ser Asn Asn
            290                 295                 300
Ser Asp Leu Thr Phe Gln Asn Asn Thr Ala Ser Pro Gln Asn Ser Leu
305             310                 315                 320
Pro Ala Pro Thr Pro Pro Thr Pro Pro Ala Val Thr Pro Leu Leu
            325                 330                 335
Gly Tyr Gly Gly Ala Ile Phe Cys Thr Pro Pro Ala Thr Pro Pro Pro
            340                 345                 350
Thr Gly Val Ser Leu Thr Ile Ser Gly Glu Asn Ser Val Thr Phe Leu
            355                 360                 365
Glu Asn Ile Ala Ser Glu Gln Gly Gly Ala Leu Tyr Gly Lys Lys Ile
    370                 375                 380
Ser Ile Asp Ser Asn Lys Ser Thr Ile Phe Leu Gly Asn Thr Ala Gly
385                 390                 395                 400
Lys Gly Gly Ala Ile Ala Ile Pro Glu Ser Gly Glu Leu Ser Leu Ser
            405                 410                 415
Ala Asn Gln Gly Asp Ile Leu Phe Asn Lys Asn Leu Ser Ile Thr Ser
            420                 425                 430
Gly Thr Pro Thr Arg Asn Ser Ile His Phe Gly Lys Asp Ala Lys Phe
    435                 440                 445
Ala Thr Leu Gly Ala Thr Gln Gly Tyr Thr Leu Tyr Phe Tyr Asp Pro
    450                 455                 460
Ile Thr Ser Asp Asp Leu Ser Ala Ala Ser Ala Ala Ala Thr Val Val
465                 470                 475                 480
Val Asn Pro Lys Ala Ser Ala Asp Gly Ala Tyr Ser Gly Thr Ile Val
            485                 490                 495
Phe Ser Gly Glu Thr Leu Thr Ala Thr Glu Ala Ala Thr Pro Ala Asn
            500                 505                 510
Ala Thr Ser Thr Leu Asn Gln Lys Leu Glu Leu Glu Gly Gly Thr Leu
            515                 520                 525
Ala Leu Arg Asn Gly Ala Thr Leu Asn Val His Asn Phe Thr Gln Asp
    530                 535                 540
Glu Lys Ser Val Val Ile Met Asp Ala Gly Thr Thr Leu Ala Thr Thr
545             550                 555                 560
Asn Gly Ala Asn Asn Thr Asp Gly Ala Ile Thr Leu Asn Lys Leu Val
            565                 570                 575
Ile Asn Leu Asp Ser Leu Asp Gly Thr Lys Ala Ala Val Val Asn Val
            580                 585                 590
Gln Ser Thr Asn Gly Ala Leu Thr Ile Ser Gly Thr Leu Gly Leu Val
    595                 600                 605
Lys Asn Ser Gln Asp Cys Cys Asp Asn His Gly Met Phe Asn Lys Asp
    610                 615                 620
```

723

Leu Gln Gln Val Pro Ile Leu Glu Leu Lys Ala Thr Ser Asn Thr Val
625   630   635   640
Thr Thr Thr Asp Phe Ser Leu Gly Thr Asn Gly Tyr Gln Gln Ser Pro
            645   650   655
Tyr Gly Tyr Gln Gly Thr Trp Glu Phe Thr Ile Asp Thr Thr Thr His
            660   665   670
Thr Val Thr Gly Asn Trp Lys Lys Thr Gly Tyr Leu Pro His Pro Glu
            675   680   685
Arg Leu Ala Pro Leu Ile Pro Asn Ser Leu Trp Ala Asn Val Ile Asp
            690   695   700
Leu Arg Ala Val Ser Gln Ala Ser Ala Ala Asp Gly Glu Asp Val Pro
705   710   715   720
Gly Lys Gln Leu Ser Ile Thr Gly Ile Thr Asn Phe Phe His Ala Asn
            725   730   735
His Thr Gly Asp Ala Arg Ser Tyr Arg His Met Gly Gly Gly Tyr Leu
            740   745   750
Ile Asn Thr Tyr Thr Arg Ile Thr Pro Asp Ala Ala Leu Ser Leu Gly
            755   760   765
Phe Gly Gln Leu Phe Thr Lys Ser Lys Asp Tyr Leu Val Gly His Gly
770   775   780
His Ser Asn Val Tyr Phe Ala Thr Val Tyr Ser Asn Ile Thr Lys Ser
785   790   795   800
Leu Phe Gly Ser Ser Arg Phe Phe Ser Gly Thr Ser Arg Val Thr
            805   810   815
Tyr Ser Arg Ser Asn Glu Lys Val Lys Thr Ser Tyr Thr Lys Leu Pro
            820   825   830
Lys Gly Arg Cys Ser Trp Ser Asn Asn Cys Trp Leu Gly Glu Leu Glu
            835   840   845
Gly Asn Leu Pro Ile Thr Leu Ser Ser Arg Ile Leu Asn Leu Lys Gln
            850   855   860
Ile Ile Pro Phe Val Lys Ala Glu Val Ala Tyr Ala Thr His Gly Gly
865   870   875   880
Ile Gln Glu Asn Thr Pro Glu Gly Arg Ile Phe Gly His Gly His Leu
            885   890   895
Leu Asn Val Ala Val Pro Val Gly Val Arg Phe Gly Lys Asn Ser His
            900   905   910
Asn Arg Pro Asp Phe Tyr Thr Ile Ile Val Ala Tyr Ala Pro Asp Val
            915   920   925
Tyr Arg His Asn Pro Asp Cys Asp Thr Thr Leu Pro Ile Asn Gly Ala
930   935   940
Thr Trp Thr Ser Ile Gly Asn Asn Leu Thr Arg Ser Thr Leu Leu Val
945   950   955   960
Gln Ala Ser Ser His Thr Ser Val Asn Asp Val Leu Glu Ile Phe Gly
            965   970   975
His Cys Gly Cys Asp Ile Arg Arg Thr Ser Arg Gln Tyr Thr Leu Asp
            980   985   990
Ile Gly Ser Lys Leu Arg Phe
            995

        <210> 456
        <211> 979
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 456
Gly Met Pro Leu Ser Phe Lys Ser Ser Ser Phe Cys Leu Leu Ala Cys
1   5   10   15
Leu Cys Ser Ala Ser Cys Ala Phe Ala Glu Thr Arg Leu Gly Gly Asn
            20   25   30
Phe Val Pro Pro Ile Thr Asn Gln Gly Glu Glu Ile Leu Leu Thr Ser
            35   40   45

724

```
Asp Phe Val Cys Ser Asn Phe Leu Gly Ala Ser Phe Ser Ser Ser Phe
    50                  55                  60
Ile Asn Ser Ser Ser Asn Leu Ser Leu Leu Gly Lys Gly Leu Ser Leu
65                  70                  75                  80
Thr Phe Thr Ser Cys Gln Ala Pro Thr Asn Ser Asn Tyr Ala Leu Leu
                85                  90                  95
Ser Ala Ala Glu Thr Leu Thr Phe Lys Asn Phe Ser Ser Ile Asn Phe
            100                 105                 110
Thr Gly Asn Gln Ser Thr Gly Leu Gly Gly Leu Ile Tyr Gly Lys Asp
            115                 120                 125
Ile Val Phe Gln Ser Ile Lys Asp Leu Ile Phe Thr Thr Asn Arg Val
    130                 135                 140
Ala Tyr Ser Pro Ala Ser Val Thr Thr Ser Ala Thr Pro Ala Ile Thr
145                 150                 155                 160
Thr Val Thr Thr Gly Ala Ser Ala Leu Gln Pro Thr Asp Ser Leu Thr
                165                 170                 175
Val Glu Asn Ile Ser Gln Ser Ile Lys Phe Phe Gly Asn Leu Ala Asn
                180                 185                 190
Phe Gly Ser Ala Ile Ser Ser Ser Pro Thr Ala Val Val Lys Phe Ile
            195                 200                 205
Asn Asn Thr Ala Thr Met Ser Phe Ser His Asn Phe Thr Ser Ser Gly
    210                 215                 220
Gly Gly Val Ile Tyr Gly Gly Ser Ser Leu Leu Phe Glu Asn Asn Ser
225                 230                 235                 240
Gly Cys Ile Ile Phe Thr Ala Asn Ser Cys Val Asn Ser Leu Lys Gly
                245                 250                 255
Val Thr Pro Ser Ser Gly Thr Tyr Ala Leu Gly Ser Gly Gly Ala Ile
                260                 265                 270
Cys Ile Pro Thr Gly Thr Phe Glu Leu Lys Asn Asn Gln Gly Lys Cys
        275                 280                 285
Thr Phe Ser Tyr Asn Gly Thr Pro Asn Asp Ala Gly Ala Ile Tyr Ala
    290                 295                 300
Glu Thr Cys Asn Ile Val Gly Asn Gln Gly Ala Leu Leu Leu Asp Ser
305                 310                 315                 320
Asn Thr Ala Ala Arg Asn Gly Gly Ala Ile Cys Ala Lys Val Leu Asn
                325                 330                 335
Ile Gln Gly Arg Gly Pro Ile Glu Phe Ser Arg Asn Arg Ala Glu Lys
            340                 345                 350
Gly Gly Ala Ile Phe Ile Gly Pro Ser Val Gly Asp Pro Ala Lys Gln
            355                 360                 365
Thr Ser Thr Leu Thr Ile Leu Ala Ser Glu Gly Asp Ile Ala Phe Gln
    370                 375                 380
Gly Asn Met Leu Asn Thr Lys Pro Gly Ile Arg Asn Ala Ile Thr Val
385                 390                 395                 400
Glu Ala Gly Gly Glu Ile Val Ser Leu Ser Ala Gln Gly Gly Ser Arg
                405                 410                 415
Leu Val Phe Tyr Asp Pro Ile Thr His Ser Leu Pro Thr Thr Ser Pro
            420                 425                 430
Ser Asn Lys Asp Ile Thr Ile Asn Ala Asn Gly Ala Ser Gly Ser Val
        435                 440                 445
Val Phe Thr Ser Lys Gly Leu Ser Ser Thr Glu Leu Leu Leu Pro Ala
    450                 455                 460
Asn Thr Thr Thr Ile Leu Leu Gly Thr Val Lys Ile Ala Ser Gly Glu
465                 470                 475                 480
Leu Lys Ile Thr Asp Asn Ala Val Val Asn Val Leu Gly Phe Ala Thr
                485                 490                 495
Gln Gly Ser Gly Gln Leu Thr Leu Gly Ser Gly Gly Thr Leu Gly Leu
            500                 505                 510
Ala Thr Pro Thr Gly Ala Pro Ala Ala Val Asp Phe Thr Ile Gly Lys
        515                 520                 525
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725

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Leu Ala Phe Asp Pro Phe Ser Phe Leu Lys Arg Asp Phe Val Ser Ala
    530                 535                 540
Ser Val Asn Ala Gly Thr Lys Asn Val Thr Leu Thr Gly Ala Leu Val
545                 550                 555                 560
Leu Asp Glu His Asp Val Thr Asp Leu Tyr Asp Met Val Ser Leu Gln
                565                 570                 575
Ser Pro Val Ala Ile Pro Ile Ala Val Phe Lys Gly Ala Thr Val Thr
                580                 585                 590
Lys Thr Gly Phe Pro Asp Gly Glu Ile Ala Thr Pro Ser His Tyr Gly
            595                 600                 605
Tyr Gln Gly Lys Trp Ser Tyr Thr Trp Ser Arg Pro Leu Leu Ile Pro
    610                 615                 620
Ala Pro Asp Gly Gly Phe Pro Gly Gly Pro Ser Pro Ser Ala Asn Thr
625                 630                 635                 640
Leu Tyr Ala Val Trp Asn Ser Asp Thr Leu Val Arg Ser Thr Tyr Ile
                645                 650                 655
Leu Asp Pro Glu Arg Tyr Gly Glu Ile Val Ser Asn Ser Leu Trp Ile
            660                 665                 670
Ser Phe Leu Gly Asn Gln Ala Phe Ser Asp Ile Leu Gln Asp Val Leu
    675                 680                 685
Leu Ile Asp His Pro Gly Leu Ser Ile Thr Ala Lys Ala Leu Gly Ala
    690                 695                 700
Tyr Val Glu His Thr Pro Arg Gln Gly His Glu Gly Phe Ser Gly Arg
705                 710                 715                 720
Tyr Gly Gly Tyr Gln Ala Ala Leu Ser Met Asn Tyr Thr Asp His Thr
                725                 730                 735
Thr Leu Gly Leu Ser Phe Gly Gln Leu Tyr Gly Lys Thr Asn Ala Asn
                740                 745                 750
Pro Tyr Asp Ser Arg Cys Ser Glu Gln Met Tyr Leu Leu Ser Phe Phe
                755                 760                 765
Gly Gln Phe Pro Ile Val Thr Gln Lys Ser Glu Ala Leu Ile Ser Trp
    770                 775                 780
Lys Ala Ala Tyr Gly Tyr Ser Lys Asn His Leu Asn Thr Thr Tyr Leu
785                 790                 795                 800
Arg Pro Asp Lys Ala Pro Lys Ser Gln Gly Gln Trp His Asn Asn Ser
                805                 810                 815
Tyr Tyr Val Leu Ile Ser Ala Glu His Pro Phe Leu Asn Trp Cys Leu
                820                 825                 830
Leu Thr Arg Pro Leu Ala Gln Ala Trp Asp Leu Ser Gly Phe Ile Ser
            835                 840                 845
Ala Glu Phe Leu Gly Gly Trp Gln Ser Lys Phe Thr Glu Thr Gly Asp
            850                 855                 860
Leu Gln Arg Ser Phe Ser Arg Gly Lys Gly Tyr Asn Val Ser Leu Pro
865                 870                 875                 880
Ile Gly Cys Ser Ser Gln Trp Phe Thr Pro Phe Lys Lys Ala Pro Ser
                885                 890                 895
Thr Leu Thr Ile Lys Leu Ala Tyr Lys Pro Asp Ile Tyr Arg Val Asn
            900                 905                 910
Pro His Asn Ile Val Thr Val Val Ser Asn Gln Glu Ser Thr Ser Ile
            915                 920                 925
Ser Gly Ala Asn Leu Arg Arg His Gly Leu Phe Val Gln Ile His Asp
    930                 935                 940
Val Val Asp Leu Thr Glu Asp Thr Gln Ala Phe Leu Asn Tyr Thr Phe
945                 950                 955                 960
Asp Gly Lys Asn Gly Phe Thr Asn His Arg Val Ser Thr Gly Leu Lys
                965                 970                 975
Ser Thr Phe
```

<210> 457
<211> 302
<212> PRT
<213> Chlamydia pneumoniae

<400> 457
Arg Tyr Phe Arg Arg Val Trp Leu Arg Phe Leu Leu Leu Val Ser Tyr
1   5   10   15
Asp Glu Lys Glu Lys Asp Val Val Val Val Cys Asn His Ser Glu Pro
                20   25   30
Asn Ile Leu Gly Leu Pro Pro Glu Ala Val Ser Gln Leu Ile Glu Glu
            35   40   45
Leu Ser Asp Glu Gly Tyr Ser Tyr Leu Asn Val Val Arg Cys Asp Leu
        50   55   60
Ser Gly Glu Thr Thr Val Gln Gln Arg Leu Leu Leu Asn Ala Asp Glu
65   70   75   80
Gly Arg Ser Met Thr Val Val Ile Ser Glu Leu Pro Glu Gly His Pro
                85   90   95
Asp Ile Arg Asn Leu Gln Leu Ala Ser Glu Arg Ile Phe Val Ser Arg
            100   105   110
Glu Lys Glu Ala Ala Asp Ala Tyr Ala Ser Gly Cys Lys Val Val Ala
            115   120   125
Phe Asp Asp Glu His Leu Pro Trp Val Ser Ser His Ile Ala Tyr Ala
        130   135   140
Glu Glu Ile Arg Glu Lys Gln Glu Gln Thr Met Gln Gly Ser Leu Thr
145   150   155   160
Glu Glu Gln Leu Gly Ala Leu Leu Cys Asn Thr Val Ser Thr Glu Lys
                165   170   175
Asn Leu Ala Phe Ala Leu Asp Ala Val Ile Lys Gln Ser Val Trp Arg
            180   185   190
Phe Arg Asn Pro Asp Leu Phe Ala Tyr Glu Arg Glu Ala Leu Glu Ala
        195   200   205
Ser Val Thr Asp Ala Leu Val Ser Tyr Val Ser Asn Leu Asp Met Ile
210   215   220
Pro Tyr Thr Ser Ser Gln Gly Ile Val Ile Glu Asp Ser Ser Ile Val
225   230   235   240
Arg Thr Ser Gln Glu His Thr Leu Ile Val Asn Cys Ala Ala Phe Asp
                245   250   255
Lys Leu Ala Ser Gln Ile Glu Phe Leu Cys Pro Ser Asp Val Leu Pro
                260   265   270
Ile Ser Gly Lys Asp Pro Leu Ile Ser Asp Asp Glu Asp Glu Glu Leu
            275   280   285
Asn Pro Lys Val Ser Ser Ala Ala Asp Ser Lys Asp Lys Thr
            290   295   300

<210> 458
<211> 414
<212> PRT
<213> Chlamydia pneumoniae

<400> 458
Ile Pro Cys Thr Phe Glu Ser Lys Arg Lys Phe Leu Met Thr His Cys
1   5   10   15
Leu His Gly Trp Phe Ser Val Val Arg His His Phe Val Gln Ala Phe
                20   25   30
Asn Phe Ser Arg Pro Leu Tyr Ser Arg Ile Thr His Phe Ala Leu Gly
            35   40   45
Val Ile Lys Ala Ile Pro Ile Val Gly His Leu Val Met Gly Val Asp
        50   55   60
Trp Leu Ile Ser His Cys Phe Glu Arg Gly Val Ser His Pro Gly Phe
65   70   75   80

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Pro Ser Asp Ile Ala Pro Ile Leu Lys Val Glu Lys Ile Ala Gly Arg
             85                  90              95
Asp His Ile Ser Arg Ile Glu Asn Gln Leu Lys Ser Leu Arg Lys Thr
            100              105              110
Ile Glu Val Glu Asp Leu Asp Lys Val His Gly Gln Tyr Gln Glu Asn
            115              120              125
Pro Tyr Ala Asp Met Ala Ser Ser Glu Val Leu Lys Leu Asp Lys Gly
        130              135              140
Val His Val Ser Glu Leu Gly Lys Ala Phe Ser Arg Val Arg Asn Arg
145              150              155              160
Ile Thr Arg Ser Tyr Ser Tyr Ala Pro Thr Pro Gln Leu Asp Ser Ile
            165              170              175
Ala Ile Val Gly Ile Asp Leu Val Ser Pro Glu Glu Gln Glu Asn Leu
            180              185              190
Val Arg Leu Ala Asn Glu Val Ile Gln Leu Tyr Pro Lys Ser Lys Thr
            195              200              205
Thr Leu Tyr Leu Leu Ile Asp Phe Asn Lys Glu Trp Val Gly Asp Ile
            210              215              220
Ser Ser Asp Lys Glu Lys Gln Leu Arg Ser Leu Gly Leu His Ser Glu
225              230              235              240
Val Gln Cys Leu Ser Val Leu Glu Pro Gln Gly Ala Glu Gly Glu Asp
            245              250              255
Thr Lys His Phe Asp Leu Met Val Gly Cys Tyr Gly Lys Asp Ser Tyr
            260              265              270
Leu Arg Glu Gly Lys Ile Leu Gln Gln Ala Leu Gly Thr Ser Leu Gly
            275              280              285
Thr Val Pro Trp Val Asn Val Met His Thr Leu Pro Ser Arg Tyr Arg
        290              295              300
Ser Arg Leu Ser Leu Pro Ile Asn Thr Glu Lys Asp Lys Thr Glu Leu
305              310              315              320
Tyr Lys Glu Ile Ser Arg Thr His His Gln Leu His Thr Leu Gly Met
            325              330              335
Gly Leu Gly Ala Gln Asp Ser Gly Leu Leu Leu Asp Arg Gln Arg Leu
            340              345              350
His Ala Pro Leu Ser Gln Gly Ser His Cys His Ser Tyr Leu Ala Asp
        355              360              365
Leu Thr His Glu Glu Leu Lys Ile Leu Leu Phe Ser Ala Phe Val Asp
        370              375              380
Ala Lys Asn Ile Ser Lys Lys Glu Leu Arg Glu Val Ser Leu Asn Phe
385              390              395              400
Ala Asn Asp Thr Ser Val Glu Cys Gly Cys Ala Phe Tyr Phe
            405              410


        <210> 459
        <211> 589
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 459
Val Phe Leu Pro Ser Arg Val Met Ala Ser Cys Leu Ser Ala Trp Phe
1             5               10              15
Ser Ile Val Arg Glu His Phe Tyr Arg Ala Phe Asp Phe Ser Leu Pro
            20              25              30
Phe Cys Ala Arg Ile Thr Glu Phe Val Leu Gly Val Ile Lys Gly Ile
        35              40              45
Pro Val Val Gly His Ile Ile Val Gly Ile Glu Trp Leu Val Ser Arg
    50              55              60
Tyr Leu Glu Ser Phe Val Thr Lys Pro Thr Phe Val Ser Asp Val Val
65              70              75              80
Ser Leu Leu Lys Thr Glu Lys Val Ala Gly Arg Asp His Ile Ala Arg
            85              90              95
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728

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Val Val Glu Thr Leu Lys Arg Gln Arg Val Ala Val Ala Pro Glu Asp
            100             105             110
Glu Asp Lys Val His Gly Lys Ile Pro Val His Pro Phe Gly Gly Ile
        115             120             125
Gln Pro Val Glu Val Leu Thr Leu Tyr Pro Glu Val Gln Asp Ala Thr
        130             135             140
Leu Gly Leu Ala Phe Ser Lys Ile Arg Asn Arg Val Arg Gln Ala Tyr
145             150             155             160
Leu Gln Ala Pro Arg Pro Lys Leu Gln Lys Ile Tyr Ile Ile Gly Asn
                165             170             175
Asp Met Asn Pro Phe Glu Val Asp Asp Phe Leu His Leu Ala Arg Leu
            180             185             190
Cys Asn Glu Thr Gln Arg Leu Tyr Pro Asp Ala Thr Ile Ser Leu Tyr
        195             200             205
Leu Thr Ala Ser Gly Gly Arg Asn Ala Met Asp Lys Lys Asn Arg Lys
    210             215             220
Leu Leu Ser Asp Cys Glu Leu Asn Pro Lys Ile Ala Cys Leu Asp Phe
225             230             235             240
Asn Gln Gly Asp Val Val Lys Gln Ala Thr Cys Asp Cys Trp Met Val
            245             250             255
Tyr His Gly Glu Asn Asp Gln Gly Thr Leu Asn Gln Ile Gln Glu Glu
            260             265             270
Leu Glu Lys Ser Gly Glu Glu Thr Pro Trp Ile His Val Gly Gln Lys
        275             280             285
Pro Leu Ser Gln Ser Leu Trp Asp Phe Ser Pro Phe Ser Ser Leu Glu
    290             295             300
Met Lys Gly Asp Lys Glu Lys Ala Leu Glu Tyr Ser Glu Leu Glu Lys
305             310             315             320
Glu Gln Leu Tyr Ser Arg Leu Val Tyr Val Gly Glu Arg Ser Ser Val
            325             330             335
Leu Ser Leu Gly Phe Gly Asp Ser Arg Ser Gly Ile Leu Met Asp Pro
            340             345             350
Lys Arg Val His Ala Pro Leu Ser Glu Gly His Tyr Cys His Ser Tyr
        355             360             365
Leu Ala Asp Leu Glu Asn Pro Gly Leu Gln Lys Thr Ile Leu Ala Ala
    370             375             380
Phe Leu Asn Pro Lys Glu Leu Ser Ser Thr Ile Leu Gln Pro Ile Ser
385             390             395             400
Leu Asn Leu Ile Leu Asn Ser Lys Thr Tyr Leu Arg Gln His Phe Gly
            405             410             415
Phe Phe Glu Arg Met Ser Arg Ser Asp Arg Asn Val Val Val Val Val
            420             425             430
Cys Asp Ser Trp Trp Gly Thr Asp Trp Lys Glu Glu Pro Ser Phe Gln
        435             440             445
His Phe Ile Met Glu Leu Glu Cys Arg Gly Tyr Ser His Phe Asn Ile
    450             455             460
Phe Ala Phe Arg Ser Asn Ser Met Cys Val Glu Glu Arg Arg Ile Leu
465             470             475             480
Asn Glu Ser Ser Gln Glu Lys Ala Phe Thr Met Ile Phe Cys Glu Asp
            485             490             495
Ser Val Ser Gln Gly Asp Ile Arg Cys Leu His Leu Ala Ser Glu Gly
        500             505             510
Met Leu Cys Gly Lys Glu Cys Tyr Ala Val Asp Val Tyr Thr Ser Gly
        515             520             525
Cys Ala Asn Phe Met Met Glu Glu Val Leu Thr Leu Glu Arg Glu Ser
        530             535             540
Asn Leu Trp Asn Arg Lys His Gly Leu Trp Lys Arg Glu Val Arg Lys
545             550             555             560
Gln Lys Gln Glu Ala Ala Leu Asp Gln Asp Glu Ser Glu Ile Tyr Val
                565             570             575
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729

Cys Asn Gln Leu Thr Ala Gln Gln Asn Phe Ala Cys Ser
            580   585

<210> 460
<211> 703
<212> PRT
<213> Chlamydia pneumoniae

<400> 460
Tyr Phe Leu Cys Cys Tyr Leu Lys Leu Phe Val Ser Asn Phe Ile Phe
1   5   10   15
Phe Val Val Met Pro Ile Pro Tyr Ile Ser Ser Trp Ile Ser Thr Val
                20   25   30
Arg Gln His Phe Val Lys Ala Phe Asp Phe Ser Arg Pro Phe Cys Ser
            35   40   45
Arg Val Thr Asn Phe Ala Leu Gly Val Ile Lys Ala Ile Pro Ile Val
        50   55   60
Gly His Ile Val Met Gly Met Glu Trp Leu Val Ser Ser Cys Val Ala
65   70   75   80
Gly Ile Ile Thr Arg Ser Ser Phe Thr Ser Asp Val Val Gln Ile Val
                85   90   95
Lys Thr Glu Lys Ala Leu Gly Arg Asp His Ile Ser Arg Val Ala Glu
            100   105   110
Ile Leu Gln Arg Glu Arg Gly Thr Ile Thr Pro Glu Asn Gln Asp Lys
            115   120   125
Val His Gly Lys Phe Pro Val Cys Pro Phe Gly Arg Leu Lys Ser Glu
        130   135   140
Glu Thr Leu Lys Leu Lys Pro Gly Glu Arg Glu Gly Thr Leu Asp Thr
145   150   155   160
Val Phe Ser Pro Ile Arg Thr Arg Val Thr Arg Ala Tyr Leu Gln Ala
                165   170   175
Pro Arg Pro Glu Ile Arg Thr Ile Ser Ile Val Gly Ser Lys Leu Lys
            180   185   190
Thr Pro Gln Asp Phe Ser Gln Phe Val Ser Leu Ala Asn Glu Thr Gln
            195   200   205
Arg Leu His Pro Glu Ala Leu Val Cys Leu Tyr Leu Thr Gly Leu Asn
    210   215   220
Arg Glu Ser Gln Met Cys Asp Thr Thr Thr Ala Glu Lys Lys Gln Tyr
225   230   235   240
Leu His Asn Ser Gly Leu Asp Ser Arg Ile Gln Cys Lys Asp Ser Lys
                245   250   255
Glu Asp Asp Ala Gly Ser Pro Glu Asn Pro Glu Leu Trp Ile Gly Tyr
                260   265   270
Tyr Ser Arg Glu Gln Gln His Asn Ile Asp Gly Gln Tyr Ile Gln Gln
            275   280   285
Cys Leu Gly Lys Ser Ala Asp Pro Ile Pro Trp Ile His Val Thr Glu
    290   295   300
Asp Thr Lys Asp Phe Tyr Tyr Pro Pro Asn Phe Thr Ser Tyr Ser His
305   310   315   320
Thr Arg Gln Ser Thr Asp Pro Thr Ser Pro Pro Arg Leu Pro Glu Ser
                325   330   335
Glu Gly Asp Lys Asp Ser Leu Tyr Gly Gln Leu Ser Arg Ser Tyr His
            340   345   350
His Glu Tyr Met Leu Gly Leu Gly Leu Lys Pro Glu Asp Ala Gly Leu
        355   360   365
Leu Met Asp Pro Asp Arg Ile Tyr Ala Pro Leu Ser Gln Gly His Tyr
    370   375   380
Cys His Ser Tyr Leu Ala Asp Ile Glu Asn Glu Asp Leu Arg Thr Leu
385   390   395   400
Val Leu Ser Pro Phe Leu Asp Pro Gly Asn Leu Ser Ser Glu Asp Leu
                405   410   415

730

Arg Pro Val Ala Phe Asn Ile Ala Arg Leu Pro Leu Glu Leu Asp Ser
            420   425   430
Leu Phe Phe Arg Leu Val Ala Gly Gln Gln Glu Gly Arg Asn Ile Val
        435   440   445
Thr Leu Ala His Gly Thr Pro Arg Pro Glu Asp Leu Asp Pro Asp Ser
        450   455   460
Met Asn Ile Leu Thr Arg Arg Leu Gln Met Ser Gly Tyr Ser Tyr Leu
465   470   475   480
Asn Ile Phe Ser Tyr Lys Ser Arg Lys Met Ile Val Lys Glu Arg Gln
            485   490   495
Phe Phe Gly Asp Arg Ser Glu Gly Lys Ser Phe Thr Leu Ile Leu Phe
            500   505   510
Glu Asp Pro Ile Ser Ala Ala Asp Phe Arg Cys Leu Gln Leu Ala Ala
        515   520   525
Glu Gly Met Val Ala Lys Asp Leu Pro Ser Val Ala Asp Ile Cys Ala
        530   535   540
Ser Gly Cys Ser Cys Ile Gln Phe Ser Glu Met Gln Ser Pro Gln Ala
545   550   555   560
Ile Glu Tyr Arg Gln Trp Glu Ala Arg Val Glu Asp Glu Ala Gly Glu
            565   570   575
Glu Ala Arg Glu Pro Val Ile Tyr Ser Gln Asp Gln Leu Ser Ser Met
            580   585   590
Leu Thr Thr Gln Gln Asn Phe Val Phe Ser Leu Asp Ala Val Val Lys
        595   600   605
Gln Ala Ile Trp Arg Phe Arg Ser Lys Gly Leu Leu Thr Met Glu Arg
        610   615   620
Lys Ala Leu Gly Glu Glu Phe Leu Thr Ala Ile Phe Ser Tyr Leu Gly
625   630   635   640
Ser Gln Glu Arg Asn Glu Asn Met Gly Lys Arg Thr Thr Glu Glu His
            645   650   655
Glu Val Val Ile Ser Phe Glu Glu Leu Asp Arg Met Val Gln Val Leu
            660   665   670
Pro Ala Glu Val Pro Ala Asp Ser Gly Asn Asp Pro Thr Arg Pro Val
        675   680   685
Pro Asn Pro Asp Ser Asn Pro Asp Ser Ser Gln Asn Glu Gly Ser
690   695   700

        <210> 461
        <211> 148
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 461
Ser Thr Lys Ile Gln Met His Pro Gly Leu Arg Asn Trp Arg Thr Ser
1   5   10   15
Thr Asn Lys Leu Arg Glu Glu Gly Ser Val Ser Phe Arg Glu Tyr Phe
            20   25   30
Arg Ala Tyr Met Cys Asp Lys Ile Val Ala Gln Lys Asn Phe Leu Phe
            35   40   45
Thr Leu Asp Ala Val Ile Lys Gln Ala Gly Trp Arg Ser Gln Glu Lys
        50   55   60
Leu Asn Leu Phe Tyr Val Glu Ser Gln Ala Leu Gly Arg Glu Ile Lys
65   70   75   80
Val Ser Leu Glu Glu Tyr Ile Gln Ser Met Val Gly Ile Leu Gly Ser
                85   90   95
Gln Arg Thr Lys Lys Ser Phe Lys Phe Ser Val Asp Phe Thr Pro Leu
            100   105   110
Glu Gln Ala Leu Gln Glu Arg Cys Ser Ser Asp Asp Asp Glu Asp Ala
        115   120   125
Thr Ala Thr Ser Thr Ala Thr Gly Ala Thr Ala Ser Pro Thr Asp Met
        130   135   140

731

His Glu Asp Glu
145

<210> 462
<211> 283
<212> PRT
<213> Chlamydia pneumoniae

<400> 462
Val Ile Gln His Leu Leu Asn Phe Ala Leu Glu Glu Thr Pro Ser Ile
1   5   10   15
Ser Val Gln Tyr Gln Glu Gln Glu Lys Leu Ser Pro Cys Asp His Ser
                20   25   30
Pro Glu Ile Gly Lys Lys Lys Arg Trp Asn Lys Leu Glu Ser Phe Ser
            35   40   45
Thr Tyr Cys Ser Leu Phe Met Ser Val Lys Asp His Tyr Lys Leu Asn
        50   55   60
Leu Gly Ile Gln Asn Ser Leu Ser Gly Trp Leu Leu Asp Pro Tyr Arg
65   70   75   80
Val Cys Ala Pro Leu Ser Ser Pro Tyr Ser Cys Pro Ser Tyr Leu Leu
                85   90   95
Asp Leu Gln Asn Lys Glu Leu Arg Arg Ser Leu Leu Ser Thr Phe Leu
            100   105   110
Asp Pro Lys Asn Leu Thr Ser Glu Thr Phe Arg Ser Val Ser Ile Asn
        115   120   125
Phe Gly Asn Ser Ser Phe Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg
    130   135   140
Val Leu His Asp Glu Lys Glu Lys His Val Ala Val Val Cys Asn Asp
145   150   155   160
Ala Lys Leu Leu Glu Gly Leu Ser Pro Glu Ala Leu Ser Leu Leu
                165   170   175
Glu Glu Asp Leu Arg Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Leu Ser
            180   185   190
Val Ser Pro Glu Gly Val Ser Lys Val Gln Glu Arg Gln Ile Leu Arg
        195   200   205
Arg Asp Leu Gln Gly Arg Ser Phe Thr Val Met Ile Thr Asp Leu Pro
    210   215   220
Leu Gly Ser Glu Asp Ile Arg Ser Leu Gln Leu Ala Ser Asp Arg Ile
225   230   235   240
Leu Val Ser Ser Ser Leu Asp Ala Ala Asp Ala Cys Ala Ser Gly Cys
                245   250   255
Lys Val Leu Val Tyr Glu Asn Pro Asn Ala Ser Trp Ala Gln Glu Leu
            260   265   270
Glu Asn Phe Tyr Lys Gln Val Glu Arg Arg Arg
        275   280

<210> 463
<211> 268
<212> PRT
<213> Chlamydia pneumoniae

<400> 463
Ile Ser Ile Val Ala Cys Pro Ser Ile Ser Ser Trp Phe Thr Val Val
1   5   10   15
Arg Gln His Phe Val Asn Ala Phe Asp Phe Thr His Pro Val Cys Ser
                20   25   30
Arg Ile Thr Asn Phe Ala Leu Gly Ile Ile Lys Ala Ile Pro Val Leu
            35   40   45
Gly His Ile Val Met Gly Ile Glu Trp Leu Ile Ser Trp Ile Pro Arg
        50   55   60

732

His Thr Val Arg His Gly Met Phe Thr Ser Asp Val Ser Ser Ala Ile
65   70   75   80
Lys Val Glu Gln Thr Arg Gly His Asn Cys Leu Ala Pro Leu Glu Ala
                85   90   95
Tyr Leu Ser Ser Leu Arg Val Pro Ile Ser Gln Glu Asp Leu Gly Lys
            100   105   110
Val His Gly Arg Thr Pro Glu Asp Pro Phe Val Asp Ile Thr Pro Thr
            115   120   125
Glu Ile Val Gln Leu Leu Pro Asp Glu Glu Leu Ser Thr Val Asp Glu
    130   135   140
Ala Leu Gln Gly Val Arg Ser Arg Leu Thr Tyr Ala Tyr Arg Ser Val
145   150   155   160
Glu Lys Pro Met Ile Gln Asp Leu Ala Leu Val Gly Phe Gly Leu Arg
                165   170   175
Asp Ser Ala Asp Leu Ile Asn Phe Val Arg Leu Ala Asn Gly Val Gln
            180   185   190
Asn His Tyr Pro His Thr Lys Val Lys Leu Tyr Leu Ala Lys Asn Leu
            195   200   205
Ala Asp Val Trp Asp Cys Glu Ile Ser Glu Glu Glu Lys Gly Gln Leu
    210   215   220
Arg Ala Leu Gly Leu Asp Pro Lys Ile Glu Ser Ile Ser Leu Thr Ser
225   230   235   240
Ala Gly Leu Pro Ser Val Pro Glu Val Ala Thr Val Asp Phe Met Ile
                245   250   255
Thr Cys Tyr Gly Lys Asp Gln Glu Val Gln Asp Pro
            260   265

<210> 464
<211> 696
<212> PRT
<213> Chlamydia pneumoniae

<400> 464
Leu Ile Phe Tyr Leu Phe Leu Asn Leu Tyr Ile Ala Cys Val Arg Phe
1   5   10   15
His Phe Gln Cys Trp Phe Asp Pro Met Ala Cys Tyr Ile Ser Ile Trp
                20   25   30
Ile Ser Thr Val Lys Gln His Phe Ile Arg Ala Phe Asp Phe Thr Arg
            35   40   45
Pro Leu Gly Ser Arg Ile Thr Asn Phe Ala Leu Gly Val Ile Lys Ala
    50   55   60
Ile Pro Ile Leu Gly Cys Val Val Ile Gly Val Ser Trp Leu Val Ser
65   70   75   80
Thr Cys Ser Ala Arg Arg Phe Gly Lys Pro Ala Phe Thr Ser Asp Val
                85   90   95
Ala Ser Ile Val Lys Ile Glu Lys Thr Arg Gly Tyr Asn Pro Leu Ala
            100   105   110
Trp Val Glu Gln Tyr Leu Arg Gln Leu Arg Val Arg Leu Pro Glu Gly
            115   120   125
Asp Leu Gly Lys Ile His Gly Lys Val Ser Arg Asp Tyr Val Cys Asp
    130   135   140
Arg Thr Pro Gln Glu Asn Leu Asn Met Val Pro His Gln Tyr Leu Gly
145   150   155   160
Glu Leu Gly Arg Ala Phe Tyr Gly Ile Arg Asn Arg Val Thr Lys Ala
                165   170   175
Tyr Gln Arg Val Thr Pro Leu Glu Val Pro Cys Leu Thr Leu Val Gly
            180   185   190
Phe Asp Ile Leu Asp Pro Glu Asp Gln Val Asn Phe Val Arg Leu Ala
            195   200   205
Asn Gly Ile Gln Thr Gln Tyr Pro Gln Thr Gln Ile Lys Leu Tyr Leu
    210   215   220

733

```
Ile Ser Ile Gln Lys Ile Trp Asn Gln Cys Asp Gly Thr Ile Ser Gln
225                 230                 235                 240
Glu Lys Glu Gln Gln Leu Arg Ser Leu Gly Leu Asp Ala Lys Ile Lys
                245                 250                 255
Cys Val Ser Ala Pro Ala Leu Leu Leu Gln Lys Tyr Leu Gln Ser Glu
                260                 265                 270
Asn Leu Pro Ser Cys Asp Leu Leu Ile Asn Tyr Tyr Gly Lys Gln Gln
                275                 280                 285
Ser Val Arg Asp Val Asp Ser Ile Lys Ser Leu Leu Asn Leu Ser Ser
                290                 295                 300
Glu His Ile Pro Ala Ile Ser Val Thr Tyr Arg Pro Asp Asp Pro Phe
305                 310                 315                 320
Tyr Ser Tyr Tyr Phe Phe Pro Gly Ser Gln Gly Gly Thr Ala Pro Asp
                325                 330                 335
Gln Arg Ile Pro Trp Ser Glu Gln Glu His Leu Gln Thr Tyr Thr Thr
                340                 345                 350
Leu Ser Asn Pro Arg Cys Asp Arg Tyr Ala Val His Leu Gly Met Glu
                355                 360                 365
Asp Phe Ala Ser Gly Val Phe Leu Asp Pro Leu Arg Val Ser Ala Pro
370                 375                 380
Leu Ser Gly Glu Tyr Ser Cys Pro Ser Tyr Leu Leu Asp Leu Lys Ser
385                 390                 395                 400
Glu Glu Leu Arg Cys Phe Leu Leu Ser Ala Phe Ile Asp Pro Asn Asn
                405                 410                 415
Ser Gly Gln Gly Asn Pro Arg Pro Met Ser Ile Asn Phe Gly Asn Ser
                420                 425                 430
Pro Leu Gly Gln Arg Trp Ser Glu Phe Leu Ser Arg Val Leu His Asp
                435                 440                 445
Glu Thr Glu Lys His Val Ala Val Val Cys Asn Asn Pro Gln Leu Ile
                450                 455                 460
Lys Lys Ser Phe Pro Ser His Ser Leu Ser Leu Leu Glu Asn Glu Leu
465                 470                 475                 480
Glu Glu Ser Gly Tyr Ser Tyr Leu Asn Ile Val Ser Val Ser Gln Glu
                485                 490                 495
Arg Thr Cys Val Lys Glu Arg Arg Ile Leu Ser Ser Asp Pro Ser Gly
                500                 505                 510
Arg Ser Phe Thr Val Ile Leu Thr Asp Leu Pro Glu Gly Ser Ser Asp
                515                 520                 525
Ile Arg Asn Leu Gln Leu Ala Ser Asp Arg Ile Leu Val Ser Ser Ala
                530                 535                 540
Leu Asp Ala Ala Asp Ala Cys Ala Ser Glu Cys Lys Ile Leu Glu Tyr
545                 550                 555                 560
Glu Asp Pro Glu Gln Glu Trp Ala Gln Gln Tyr Ala Ser Phe Tyr Arg
                565                 570                 575
Asn Ile Asp Arg Ala Gly Asp Leu Gln Arg Gln Gly Ile Pro Gly Glu
                580                 585                 590
Pro Leu Gly Val Ser Ala Ser Thr Arg Val Val Leu Glu Lys Asp Ile
                595                 600                 605
Val Phe Asn Leu Asn Ala Val Ile Gln Gln Ala Met Trp Lys Phe Lys
                610                 615                 620
Lys Arg Asp Leu Phe Ala Val Glu Ser Gln Ala Leu Gly Asp Asp Met
625                 630                 635                 640
Arg Arg Ala Leu Glu Gly Tyr Ile Gly Ser Ser Leu Leu Val Glu Gly
                645                 650                 655
Thr Ile Gln Pro Gln Val Ala Cys Asn Val Asn Val Ser Phe Ala Thr
                660                 665                 670
Leu Asp Glu Ala Val Cys Ala Ala Cys Asp Ser Ala Gln Asp Ala Pro
                675                 680                 685
Ser Glu Glu Asn Asn Thr Asp Asp
690                 695
```

734

<210> 465
<211> 430
<212> PRT
<213> Chlamydia pneumoniae

<400> 465

```
Leu Ser Ser Pro Tyr Glu Lys Thr Glu Gln Leu Leu Gly Thr Pro Asn
1               5                   10                  15
Cys Arg Thr Pro Arg Val Asn Ile Ser Thr Val Gly Ile Pro Ile Asp
            20                  25                  30
Glu Thr Ser Asn Ala Phe Val Asp Ser Met Met Lys Gln Gly Val Gly
            35                  40                  45
Gln Asp Ala Lys Glu Leu Tyr Thr Phe Leu Ser Arg Gly Asn Glu His
        50                  55                  60
Tyr Gln Pro Cys Leu Trp Phe Ser Leu Glu Glu Glu Leu Gly Phe Leu
65                  70                  75                  80
Phe Asp Glu Lys Met Leu Cys Ala Pro Leu Ser Glu Asp His Tyr Cys
                85                  90                  95
His Ser Tyr Leu Val Asp Leu Val Asp Gln His Leu Lys Asp Leu Ile
            100                 105                 110
Leu Ser Met Phe Leu Asp Pro Gln Asn Ile Ser Ala Gly Glu Leu Leu
            115                 120                 125
Lys Val Ser Ile Asn Val Gly Asp Ser Phe Ser Pro Leu Gln Gln Lys
        130                 135                 140
Asp Phe Leu Ser Met Val Leu Arg Asp Glu Thr Gly Lys Asn Val Val
145                 150                 155                 160
Val Val Phe Lys Gly Val Leu Ser Leu Pro Ala Thr Gln Val Cys Lys
                165                 170                 175
Leu Val Glu Glu Leu Asn Ser Lys Asp Tyr Ser Tyr Leu Asn Ile Phe
            180                 185                 190
Ser Cys His Gly Asp Ser Ser Pro Gln Leu Leu Phe Arg Lys Glu Leu
            195                 200                 205
Glu Gly Thr Ser Gly Arg Tyr Phe Thr Val Ile Cys Ala Leu Tyr Leu
            210                 215                 220
Gly Asp Thr Asp Met Arg Ser Leu Gln Leu Ala Ser Glu Arg Ile Met
225                 230                 235                 240
Val Ser Arg Glu Phe Asp Leu Val Asp Ala Tyr Ala Ala Arg Cys Lys
                245                 250                 255
Leu Leu Lys Ile Asp His Thr Asn Trp Arg Pro Gly Thr Phe Ser Arg
            260                 265                 270
His Ala Asp Phe Ala Asp Ala Val Asp Val Ser Ala Gly Phe Asn Ser
            275                 280                 285
Arg Glu Phe Lys Leu Ile Thr Gln Ala Asn Gln Gly Ile Leu Glu Ser
            290                 295                 300
Gly Glu Leu Pro Leu Pro Ser Lys Thr Phe Trp Glu Gly Phe Leu Ala
305                 310                 315                 320
Phe Cys Asp Arg Val Thr Val Thr Arg His Phe Ile Pro Met Leu Asp
                325                 330                 335
Ala Ala Ile Lys Gln Ala Val Trp Thr His Lys His Pro Ser Leu Ile
                340                 345                 350
Asp Lys Glu Cys Glu Ala Leu Asp Leu Lys Thr Gln Cys Leu Pro Ser
            355                 360                 365
Ile Val Ser Tyr Leu Glu Tyr Val Thr Asn Ser His Glu Lys Thr Ser
        370                 375                 380
Lys Gly Pro Phe Ile Gln Lys Glu Ile Ile Ala Asp Cys Ser Pro Leu
385                 390                 395                 400
Lys Glu Ala Leu Phe Pro Gly Ser Asp Glu Asp Val Pro Ser Thr Ser
                405                 410                 415
Glu Asp Pro Ser Asp Asp His Pro Ser Asp Leu Glu Asp Ser
            420                 425                 430
```

735

<210> 466
<211> 186
<212> PRT
<213> Chlamydia pneumoniae

<400> 466

```
Ser Leu Glu Thr Arg Gly Arg Phe Thr Glu Ile Cys Leu Gln Leu Leu
1                   5                   10                  15
Phe Phe Asp Ile Gln Ser Leu Lys Phe Leu Gln Leu Phe Ser Glu Gly
                20                  25                  30
Thr Ala Leu Asn Leu Phe Arg Ile Phe Ala Pro Leu Arg Asn Arg Val
            35                  40                  45
Thr Thr Glu Tyr Ser Arg Ala Arg Gln Pro Asp Leu His Arg Ile Ala
        50                  55                  60
Ile Val Tyr Ile Gly Val Leu Asp Ser Glu Ser Ser Lys Ile Leu Glu
65                  70                  75                  80
Arg Leu Ile Ser Tyr Met Ser Cys Ile Tyr Ser Glu Ser Gln Met Tyr
                85                  90                  95
Leu Arg Phe Phe Met Gly Lys Asn Val Asn Gln Ser Ala Val Leu Ser
                100                 105                 110
Lys Leu His Val Glu Asn Leu His Ile Arg Cys Gly Phe Phe Ser Glu
            115                 120                 125
Asp Ala Val Pro Glu Ser Glu Pro Phe Asp Leu Ser Ile Tyr Val His
            130                 135                 140
Thr Asp Arg Ser Cys Pro Leu Pro Thr Lys Lys Arg Ser Ser Ser Trp
145                 150                 155                 160
Glu Leu Gln Thr Val Glu Leu Pro Glu Ser Ile Tyr Pro Gln Ser Glu
                165                 170                 175
Phe Leu Leu Met Arg Pro Arg Met Leu Ser
                180                 185
```

<210> 467
<211> 136
<212> PRT
<213> Chlamydia pneumoniae

<400> 467

```
Leu Leu Glu Asn Asn Arg Phe Phe Leu Phe Phe Lys Val Lys Tyr Phe
1                   5                   10                  15
Leu Lys Asp Ser Phe Leu Met Ser Tyr Tyr Phe Ser Leu Trp Tyr Leu
                20                  25                  30
Lys Val Gln Gln His Phe Gln Ala Ala Phe Asp Phe Thr Arg Ser Leu
            35                  40                  45
Cys Ser Arg Ile Ser Asn Phe Ala Leu Gly Val Ile Ala Leu Leu Pro
        50                  55                  60
Ile Ile Gly Gln Leu Tyr Val Gly Leu Asp Trp Leu Leu Ser Arg Ile
65                  70                  75                  80
Lys Lys Pro Glu Phe Pro Ser Asp Val Asp Gln Ile Val Arg Val Glu
                85                  90                  95
His Val Val Gly His Asp His Arg Ser Arg Val Glu Asp Ile Leu Lys
                100                 105                 110
Arg Gln Arg Leu Ser Leu Glu Pro Arg Asp Glu Gly Lys Val His Gly
            115                 120                 125
Asp Leu Pro Ser Ala Pro Phe Phe
130                 135
```

<210> 468
<211> 940
<212> PRT
<213> Chlamydia pneumoniae

736

<400> 468

```
Thr Ser Met Arg Phe Phe Cys Phe Gly Met Leu Leu Pro Phe Thr Phe
 1               5                   10                  15
Val Leu Ala Asn Glu Gly Leu Gln Leu Pro Leu Glu Thr Tyr Ile Thr
            20                  25                  30
Leu Ser Pro Glu Tyr Gln Ala Ala Pro Gln Val Gly Phe Thr His Asn
        35                  40                  45
Gln Asn Gln Asp Leu Ala Ile Val Gly Asn His Asn Asp Phe Ile Leu
    50                  55                  60
Asp Tyr Lys Tyr Tyr Arg Ser Asn Gly Gly Ala Leu Thr Cys Lys Asn
65                  70                  75                  80
Leu Leu Ile Ser Glu Asn Ile Gly Asn Val Phe Phe Glu Lys Asn Val
            85                  90                  95
Cys Pro Asn Ser Gly Gly Ala Ile Tyr Ala Ala Gln Asn Cys Thr Ile
            100                 105                 110
Ser Lys Asn Gln Asn Tyr Ala Phe Thr Thr Asn Leu Val Ser Asp Asn
        115                 120                 125
Pro Thr Ala Thr Ala Gly Ser Leu Leu Gly Gly Ala Leu Phe Ala Ile
    130                 135                 140
Asn Cys Ser Ile Thr Asn Asn Leu Gly Gln Gly Thr Phe Val Asp Asn
145                 150                 155                 160
Leu Ala Leu Asn Lys Gly Gly Ala Leu Tyr Thr Glu Thr Asn Leu Ser
            165                 170                 175
Ile Lys Asp Asn Lys Gly Pro Ile Ile Ile Lys Gln Asn Arg Ala Leu
        180                 185                 190
Asn Ser Asp Ser Leu Gly Gly Gly Ile Tyr Ser Gly Asn Ser Leu Asn
    195                 200                 205
Ile Glu Gly Asn Ser Gly Ala Ile Gln Ile Thr Ser Asn Ser Ser Gly
    210                 215                 220
Ser Gly Gly Gly Ile Phe Ser Thr Gln Thr Leu Thr Ile Ser Ser Asn
225                 230                 235                 240
Lys Lys Leu Ile Glu Ile Ser Glu Asn Ser Ala Phe Ala Asn Asn Tyr
            245                 250                 255
Gly Ser Asn Phe Asn Pro Gly Gly Gly Gly Leu Thr Thr Thr Phe Cys
            260                 265                 270
Thr Ile Leu Asn Asn Arg Glu Gly Val Leu Phe Asn Asn Asn Gln Ser
    275                 280                 285
Gln Ser Asn Gly Gly Ala Ile His Ala Lys Ser Ile Ile Ile Lys Glu
    290                 295                 300
Asn Gly Pro Val Tyr Phe Leu Asn Asn Thr Ala Thr Arg Gly Gly Ala
305                 310                 315                 320
Leu Leu Asn Leu Ser Ala Gly Ser Gly Asn Gly Ser Phe Ile Leu Ser
            325                 330                 335
Ala Asp Asn Gly Asp Ile Ile Phe Asn Asn Asn Thr Ala Ser Lys His
            340                 345                 350
Ala Leu Asn Pro Pro Tyr Arg Asn Ala Ile His Ser Thr Pro Asn Met
            355                 360                 365
Asn Leu Gln Ile Gly Ala Arg Pro Gly Tyr Arg Val Leu Phe Tyr Asp
    370                 375                 380
Pro Ile Glu His Glu Leu Pro Ser Ser Phe Pro Ile Leu Phe Asn Phe
385                 390                 395                 400
Glu Thr Gly His Thr Gly Thr Val Leu Phe Ser Gly Glu His Val His
            405                 410                 415
Gln Asn Phe Thr Asp Glu Met Asn Phe Phe Ser Tyr Leu Arg Asn Thr
            420                 425                 430
Ser Glu Leu Arg Gln Gly Val Leu Ala Val Glu Asp Gly Ala Gly Leu
            435                 440                 445
Ala Cys Tyr Lys Phe Phe Gln Arg Gly Gly Thr Leu Leu Leu Gly Gln
            450                 455                 460
Gly Ala Val Ile Thr Thr Ala Gly Thr Ile Pro Thr Pro Ser Ser Thr
465                 470                 475                 480
```

737

```
Pro Thr Thr Val Gly Ser Thr Ile Thr Leu Asn His Ile Ala Ile Asp
              485              490              495
Leu Pro Ser Ile Leu Ser Phe Gln Ala Gln Ala Pro Lys Ile Trp Ile
              500              505              510
Tyr Pro Thr Lys Thr Gly Ser Thr Tyr Thr Glu Asp Ser Asn Pro Thr
              515              520              525
Ile Thr Ile Ser Gly Thr Leu Thr Leu Arg Asn Ser Asn Asn Glu Asp
        530              535              540
Pro Tyr Asp Ser Leu Asp Leu Ser His Ser Leu Glu Lys Val Pro Leu
545              550              555              560
Leu Tyr Ile Val Asp Val Ala Ala Gln Lys Ile Asn Ser Ser Gln Leu
              565              570              575
Asp Leu Ser Thr Leu Asn Ser Gly Glu His Tyr Gly Tyr Gln Gly Ile
              580              585              590
Trp Ser Thr Tyr Trp Val Glu Thr Thr Thr Ile Thr Asn Pro Thr Ser
        595              600              605
Leu Leu Gly Ala Asn Thr Lys His Lys Leu Leu Tyr Ala Asn Trp Ser
    610              615              620
Pro Leu Gly Tyr Arg Pro His Pro Glu Arg Arg Gly Glu Phe Ile Thr
625              630              635              640
Asn Ala Leu Trp Gln Ser Ala Tyr Thr Ala Leu Ala Gly Leu His Ser
              645              650              655
Leu Ser Ser Trp Asp Glu Glu Lys Gly His Ala Ala Ser Leu Gln Gly
              660              665              670
Ile Gly Leu Leu Val His Gln Lys Asp Lys Asn Gly Phe Lys Gly Phe
              675              680              685
Arg Ser His Met Thr Gly Tyr Ser Ala Thr Thr Glu Ala Thr Ser Ser
    690              695              700
Gln Ser Pro Asn Phe Ser Leu Gly Phe Ala Gln Phe Phe Ser Lys Ala
705              710              715              720
Lys Glu His Glu Ser Gln Asn Ser Thr Ser Ser His His Tyr Phe Ser
              725              730              735
Gly Met Cys Ile Glu Asn Thr Leu Phe Lys Glu Trp Ile Arg Leu Ser
              740              745              750
Val Ser Leu Ala Tyr Met Phe Thr Ser Glu His Thr His Thr Met Tyr
              755              760              765
Gln Gly Leu Leu Glu Gly Asn Ser Gln Gly Ser Phe His Asn His Thr
    770              775              780
Leu Ala Gly Ala Leu Ser Cys Val Phe Leu Pro Gln Pro His Gly Glu
785              790              795              800
Ser Leu Gln Ile Tyr Pro Phe Ile Thr Ala Leu Ala Ile Arg Gly Asn
              805              810              815
Leu Ala Ala Phe Gln Glu Ser Gly Asp His Ala Arg Glu Phe Ser Leu
              820              825              830
His Arg Pro Leu Thr Asp Val Ser Leu Pro Val Gly Ile Arg Ala Ser
              835              840              845
Trp Lys Asn His His Arg Val Pro Leu Val Trp Leu Thr Glu Ile Ser
    850              855              860
Tyr Arg Ser Thr Leu Tyr Arg Gln Asp Pro Glu Leu His Ser Lys Leu
865              870              875              880
Leu Ile Ser Gln Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Thr Tyr
              885              890              895
Asn Ala Leu Gly Ile Lys Val Lys Asn Thr Met Gln Val Phe Pro Lys
              900              905              910
Val Thr Leu Ser Leu Asp Tyr Ser Ala Asp Ile Ser Ser Ser Thr Leu
              915              920              925
Ser His Tyr Leu Asn Val Ala Ser Arg Met Arg Phe
    930              935              940
```

                                    738

<210> 469
<211> 969
<212> PRT
<213> Chlamydia pneumoniae

<400> 469

```
Asn Glu Ile Leu Thr Ile Ser Asp Gln Asn Arg Lys Ile Lys Glu Pro
 1               5                  10                  15
Leu Val Ser Lys Thr Pro Pro Lys Phe Leu Phe Tyr Leu Gly Asn Phe
            20              25                  30
Thr Ala Cys Met Phe Gly Met Thr Pro Ala Val Tyr Ser Leu Gln Thr
            35              40                  45
Asp Ser Leu Glu Lys Phe Ala Leu Glu Arg Asp Glu Glu Phe Arg Thr
    50              55                  60
Ser Phe Pro Leu Leu Asp Ser Leu Ser Thr Leu Thr Gly Phe Ser Pro
65              70                  75                  80
Ile Thr Thr Phe Val Gly Asn Arg His Asn Ser Ser Gln Asp Ile Val
                85                  90                  95
Leu Ser Asn Tyr Lys Ser Ile Asp Asn Ile Leu Leu Leu Trp Thr Ser
            100                 105                 110
Ala Gly Gly Ala Val Ser Cys Asn Asn Phe Leu Leu Ser Asn Val Glu
            115                 120                 125
Asp His Ala Phe Phe Ser Lys Asn Leu Ala Ile Gly Thr Gly Gly Ala
    130                 135                 140
Ile Ala Cys Gln Gly Ala Cys Thr Ile Thr Lys Asn Arg Gly Pro Leu
145                 150                 155                 160
Ile Phe Phe Ser Asn Arg Gly Leu Asn Asn Ala Ser Thr Gly Gly Glu
                165                 170                 175
Thr Arg Gly Gly Ala Ile Ala Cys Asn Gly Asp Phe Thr Ile Ser Gln
                180                 185                 190
Asn Gln Gly Thr Phe Tyr Phe Val Asn Asn Ser Val Asn Asn Trp Gly
            195                 200                 205
Gly Ala Leu Ser Thr Asn Gly His Cys Arg Ile Gln Ser Asn Arg Ala
    210                 215                 220
Pro Leu Leu Phe Phe Asn Asn Thr Ala Pro Ser Gly Gly Gly Ala Leu
225                 230                 235                 240
Arg Ser Glu Asn Thr Thr Ile Ser Asp Asn Thr Arg Pro Ile Tyr Phe
                245                 250                 255
Lys Asn Asn Cys Gly Asn Asn Gly Gly Ala Ile Gln Thr Ser Val Thr
                260                 265                 270
Val Ala Ile Lys Asn Asn Ser Gly Ser Val Ile Phe Asn Asn Asn Thr
            275                 280                 285
Ala Leu Ser Gly Ser Ile Asn Ser Gly Asn Gly Ser Gly Gly Ala Ile
            290                 295                 300
Tyr Thr Thr Asn Leu Ser Ile Asp Asp Asn Pro Gly Thr Ile Leu Phe
305                 310                 315                 320
Asn Asn Asn Tyr Cys Ile Arg Asp Gly Gly Ala Ile Cys Thr Gln Phe
                325                 330                 335
Leu Thr Ile Lys Asn Ser Gly His Val Tyr Phe Thr Asn Asn Gln Gly
            340                 345                 350
Asn Trp Gly Gly Ala Leu Met Leu Leu Gln Asp Ser Thr Cys Leu Leu
            355                 360                 365
Phe Ala Glu Gln Gly Asn Ile Ala Phe Gln Asn Asn Glu Val Phe Leu
    370                 375                 380
Thr Thr Phe Gly Arg Tyr Asn Ala Ile His Cys Thr Pro Asn Ser Asn
385                 390                 395                 400
Leu Gln Leu Gly Ala Asn Lys Gly Tyr Thr Thr Ala Phe Phe Asp Pro
                405                 410                 415
Ile Glu His Gln His Pro Thr Thr Asn Pro Leu Ile Phe Asn Pro Asn
            420                 425                 430
```

```
Ala Asn His Gln Gly Thr Ile Leu Phe Ser Ser Ala Tyr Ile Pro Glu
        435                 440                 445
Ala Ser Asp Tyr Glu Asn Asn Phe Ile Ser Ser Ser Lys Asn Thr Ser
        450                 455                 460
Glu Leu Arg Asn Gly Val Leu Ser Ile Glu Asp Arg Ala Gly Trp Gln
465                 470                 475                 480
Phe Tyr Lys Phe Thr Gln Lys Gly Gly Ile Leu Lys Leu Gly His Ala
                485                 490                 495
Ala Ser Ile Ala Thr Thr Ala Asn Ser Glu Thr Pro Ser Thr Ser Val
                500                 505                 510
Gly Ser Gln Val Ile Ile Asn Asn Leu Ala Ile Asn Leu Pro Ser Ile
        515                 520                 525
Leu Ala Lys Gly Lys Ala Pro Thr Leu Trp Ile Arg Pro Leu Gln Ser
        530                 535                 540
Ser Ala Pro Phe Thr Glu Asp Asn Asn Pro Thr Ile Thr Leu Ser Gly
545                 550                 555                 560
Pro Leu Thr Leu Leu Asn Glu Glu Asn Arg Asp Pro Tyr Asp Ser Ile
                565                 570                 575
Asp Leu Ser Glu Pro Leu Gln Asn Ile His Leu Leu Ser Leu Ser Asp
        580                 585                 590
Val Thr Ala Arg His Ile Asn Thr Asp Asn Phe His Pro Glu Ser Leu
        595                 600                 605
Asn Ala Thr Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
        610                 615                 620
Val Glu Thr Ile Thr Thr Thr Asn Asn Ala Ser Ile Glu Thr Ala Asn
625                 630                 635                 640
Thr Leu Tyr Arg Ala Leu Tyr Ala Asn Trp Thr Pro Leu Gly Tyr Lys
                645                 650                 655
Val Asn Pro Glu Tyr Gln Gly Asp Leu Ala Thr Thr Pro Leu Trp Gln
                660                 665                 670
Ser Phe His Thr Met Phe Ser Leu Leu Arg Ser Tyr Asn Arg Thr Gly
        675                 680                 685
Asp Ser Asp Ile Glu Arg Pro Phe Leu Glu Ile Gln Gly Ile Ala Asp
        690                 695                 700
Gly Leu Phe Val His Gln Asn Ser Ile Pro Gly Ala Pro Gly Phe Arg
705                 710                 715                 720
Ile Gln Ser Thr Gly Tyr Ser Leu Gln Ala Ser Ser Glu Thr Ser Leu
                725                 730                 735
His Gln Lys Ile Ser Leu Gly Phe Ala Gln Phe Phe Thr Arg Thr Lys
                740                 745                 750
Glu Ile Gly Ser Ser Asn Asn Val Ser Ala His Asn Thr Val Ser Ser
        755                 760                 765
Leu Tyr Val Glu Leu Pro Trp Phe Gln Glu Ala Phe Ala Thr Ser Thr
        770                 775                 780
Val Leu Ala Tyr Gly Tyr Gly Asp His His Leu His Ser Leu His Pro
785                 790                 795                 800
Ser His Gln Glu Gln Ala Glu Gly Thr Cys Tyr Ser His Thr Leu Ala
                805                 810                 815
Ala Ala Ile Gly Cys Ser Phe Pro Trp Gln Gln Lys Ser Tyr Leu His
                820                 825                 830
Leu Ser Pro Phe Val Gln Ala Ile Ala Ile Arg Ser His Gln Thr Ala
        835                 840                 845
Phe Glu Glu Ile Gly Asp Asn Pro Arg Lys Phe Val Ser Gln Lys Pro
        850                 855                 860
Phe Tyr Asn Leu Thr Leu Pro Leu Gly Ile Gln Gly Lys Trp Gln Ser
865                 870                 875                 880
Lys Phe His Val Pro Thr Glu Trp Thr Leu Glu Leu Ser Tyr Gln Pro
                885                 890                 895
Val Leu Tyr Gln Gln Asn Pro Gln Ile Gly Val Thr Leu Leu Ala Ser
        900                 905                 910
```

740

```
Gly Gly Ser Trp Asp Ile Leu Gly His Asn Tyr Val Arg Asn Ala Leu
        915             920             925
Gly Tyr Lys Val His Asn Gln Thr Ala Leu Phe Arg Ser Leu Asp Leu
        930             935             940
Phe Leu Asp Tyr Gln Gly Ser Val Ser Ser Ser Thr Ser Thr His His
945             950             955             960
Leu Gln Ala Gly Ser Thr Leu Lys Phe
                965


        <210> 470
        <211> 275
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 470
Ile Tyr Lys Leu Leu Asp Asn Lys Leu Met Ile Phe Tyr Asp Lys Leu
1               5               10              15
Tyr Phe His Ile Lys Val Trp Met Phe Met Arg Pro Ile Cys Leu Ser
        20              25              30
Ile Leu Ser Thr Ala Leu Cys Cys Ser Leu Ser Gly Asn Glu Val Pro
        35              40              45
Asn Leu Ala Ser Cys Gln Met Ser Arg Lys Asp Ile Ser Ala Phe His
        50              55              60
Thr Ser Pro Ser Phe Arg Leu Asn Val Thr Pro Glu Pro Leu Val Ser
65              70              75              80
Ser Phe Arg Pro Ser Asn Leu Leu Asn Gly Phe Gly His Asp Ile Thr
                85              90              95
Gln Asp Ile Thr Ile Thr Gly Asn Ser Ile Asn Ser Val Ile Asp Tyr
        100             105             110
Asn Tyr His Tyr Glu Asp Gly Gly Ile Leu Ala Cys Lys Asn Leu Phe
        115             120             125
Ile Ser Glu Asn Lys Gly Asn Leu Ser Phe Glu Arg Asn Ser Ser His
        130             135             140
Ser Ser Gly Gly Ala Leu Tyr Ser Val Arg Glu Cys Trp Ile Ser Lys
145             150             155             160
Asn Gln Asn Tyr Ser Phe Ile Ser Asn Ala Ala Ser Leu Ala Thr Thr
                165             170             175
Thr Thr Ser Gly Phe Gly Gly Ala Ile His Ala Leu Asp Ser Tyr Ile
                180             185             190
Thr Asn Asn Leu Gly Glu Gly Gln Phe Leu Asp Asn Val Ser Lys Asn
        195             200             205
Arg Gly Gly Ala Ile Tyr Val Gly Val Ser Leu Ser Ile Thr Asp Asn
        210             215             220
Leu Gly Pro Ile Val Ile Lys Lys Asn Gln Thr Leu Glu Asp Ser Ser
225             230             235             240
Phe Gly Gly Gly Ile Phe Cys Arg Ala Val Asn Ile Glu Arg Asn Tyr
                245             250             255
Gln Asn Ile Gln Ile Asn Asp Asn Ala Ser Gly Gln Gly Val Val Tyr
        260             265             270
Phe Leu Pro
        275


        <210> 471
        <211> 354
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 471
Cys Phe Arg Thr Arg Gly Gly Ile Phe Ser Ala Leu Gly Val Ile Ile
1               5               10              15
```

741

```
Ser Ser Asn Lys Glu Ile Ile Glu Ile Ser Asn His Ser Ala Ser Ser
            20                  25                  30
Ile Asn Thr Ala Ser Gly Lys Leu Tyr Pro Gly Gly Gly Gly Ile Met
        35                  40                  45
Cys Thr Ser Leu Val Ile Glu Asn Asn Pro Lys Gly Leu Ile Phe Asn
    50                  55                  60
Asn Lys Thr Ala Ala Leu Ser Gly Gly Ala Ile His Thr Arg Ser Phe
65                  70                  75                  80
Ile Phe Gln Asn Asn Gly Pro Thr Ala Phe Ile Asn Asn Ser Ala Thr
                85                  90                  95
Ser Gly Gly Ala Leu Ile Asn Leu Ser Gly Ile Gly Ser Thr Pro Gln
                100                 105                 110
Asn Phe Phe Leu Ser Ala Asp Tyr Gly Asp Ile Leu Phe Asn Asn Asn
        115                 120                 125
Thr Ile Thr Ser Ser Ser Pro Gln Pro Gly Tyr Arg Asn Ala Leu Tyr
    130                 135                 140
Ala Ala Pro Gly Ile Asn Leu Lys Leu Gly Ala Arg Gln Gly Tyr Lys
    145                 150                 155                 160
Ile Leu Phe Tyr Asp Pro Ile Asp His Asp Gln Thr Thr Thr Asp Pro
                165                 170                 175
Ile Val Phe Asn Tyr Glu Pro His His Leu Gly Thr Val Leu Phe Ser
                180                 185                 190
Gly Ile Asn Val Asp Ser Asn Ala Thr Asn Pro Leu Asn Phe Leu Ser
        195                 200                 205
Lys Phe Ser Asn Ser Ser Arg Leu Glu Arg Gly Val Leu Ala Ile Glu
    210                 215                 220
Asp Arg Ala Ala Ile Ser Cys Lys Thr Leu Ser Gln Thr Gly Gly Ile
225                 230                 235                 240
Leu Arg Leu Gly Asn Ala Ala Leu Ile Arg Thr Lys Gly Pro Gly Ser
                245                 250                 255
Ser Ile Asn Phe Asn Ala Ile Ala Ile Asn Leu Pro Ser Ile Leu Gln
                260                 265                 270
Ser Glu Ala Ser Ala Pro Lys Phe Trp Ile Tyr Pro Thr Leu Thr Gly
    275                 280                 285
Ser Thr Tyr Ser Glu Asp Thr Ser Ser Thr Ile Thr Leu Ser Gly Pro
    290                 295                 300
Leu Thr Phe Leu Asn Asp Glu Asn Glu Asn Pro Tyr Asp Ser Leu Asp
305                 310                 315                 320
Leu Ser Glu Pro Arg Lys Asp Ile Pro Pro Pro Leu Pro Pro Arg Cys
                325                 330                 335
Asp Cys Lys Lys Asn Arg Tyr Phe Glu Ser His Cys Arg Ser His Glu
                340                 345                 350
Leu Arg
```

```
            <210> 472
            <211> 392
            <212> PRT
            <213> Chlamydia pneumoniae

            <400> 472
Ile Ser Leu Asn Leu Glu Arg Ile Ser Pro Leu Leu Tyr Leu Leu Asp
 1               5                  10                  15
Val Thr Ala Lys Lys Ile Asp Thr Ser Asn Leu Ile Val Glu Ala Met
            20                  25                  30
Asn Leu Asp Glu His Tyr Gly Tyr Gln Gly Ile Trp Ser Pro Tyr Trp
        35                  40                  45
Met Glu Thr Thr Thr Thr Thr Ser Ser Thr Val Pro Glu Gln Thr Asn
    50                  55                  60
Thr Asn His Arg Gln Leu Tyr Val Asp Trp Thr Pro Val Gly Tyr Arg
65                  70                  75                  80
```

742

```
Pro Asn Pro Glu Arg His Gly Glu Phe Ile Ala Asn Thr Leu Trp Gln
              85                  90                  95
Ser Ala Tyr Asn Ala Leu Leu Gly Ile Arg Ile Leu Pro Pro Gln Asn
             100                 105                 110
Leu Lys Glu His Asp Leu Glu Ala Ser Leu Gln Gly Leu Gly Leu Leu
         115                 120                 125
Ile Asn Gln His Asn Arg Glu Gly Arg Lys Gly Phe Arg Asn His Thr
     130                 135                 140
Thr Gly Tyr Ala Ala Thr Thr Ser Ala Lys Thr Ala Ala Arg His Ser
145                 150                 155                 160
Phe Ser Leu Gly Phe Ala Gln Met Phe Ser Lys Thr Arg Glu Arg Gln
                 165                 170                 175
Ser Pro Ser Thr Thr Ser Ser His Asn Tyr Phe Ala Gly Leu Arg Phe
             180                 185                 190
Asp Ser Leu Leu Phe Arg Asp Phe Ile Ser Thr Gly Leu Ser Leu Gly
         195                 200                 205
Tyr Ser Tyr Gly Asp His His Met Leu Cys His Tyr Thr Glu Ile Leu
     210                 215                 220
Lys Gly Ser Ser Lys Ala Phe Phe Asn Asn His Thr Leu Val Ala Ser
225                 230                 235                 240
Leu Asp Cys Thr Phe Leu Pro Ala Arg Ile Thr Arg Thr Leu Glu Leu
                 245                 250                 255
Gln Pro Phe Ile Ser Ala Ile Ala Leu Arg Cys Ser Gln Ala Ser Phe
                 260                 265                 270
Gln Glu Thr Gly Asp His Ile Arg Lys Phe His Pro Lys His Pro Leu
         275                 280                 285
Thr Asp Leu Ser Ser Pro Ile Gly Phe Arg Ser Glu Trp Lys Thr Ser
     290                 295                 300
His His Ile Pro Met Leu Trp Thr Thr Glu Ile Ser Tyr Val Pro Thr
305                 310                 315                 320
Leu Tyr Arg Lys Asn Pro Glu Met Phe Thr Thr Leu Leu Ile Ser Asn
                 325                 330                 335
Gly Thr Trp Thr Thr Gln Ala Thr Pro Val Ser Tyr Asn Ser Val Ala
             340                 345                 350
Ala Lys Ile Lys Asn Thr Ser Gln Leu Phe Ser Arg Val Thr Leu Ser
         355                 360                 365
Leu Asp Tyr Ser Ala Gln Val Ser Ser Ser Thr Val Gly Gln Tyr Leu
     370                 375                 380
Lys Ala Glu Ser His Cys Thr Phe
385                 390


        <210> 473
        <211> 947
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 473
Thr Val Gln Asn Asn Arg Ser Leu Ser Lys Ser Ser Phe Phe Val Gly
 1               5                  10                  15
Ala Leu Ile Leu Gly Lys Thr Thr Ile Leu Leu Asn Ala Thr Pro Leu
             20                  25                  30
Ser Asp Tyr Phe Asp Asn Gln Ala Asn Gln Leu Thr Thr Leu Phe Pro
         35                  40                  45
Leu Ile Asp Thr Leu Thr Asn Met Thr Pro Tyr Ser His Arg Ala Thr
     50                  55                  60
Leu Phe Gly Val Arg Asp Asp Thr Asn Gln Asp Ile Val Leu Asp His
65                  70                  75                  80
Gln Asn Ser Ile Glu Ser Trp Phe Glu Asn Phe Ser Gln Asp Gly Gly
                 85                  90                  95
Ala Leu Ser Cys Lys Ser Leu Ala Ile Thr Asn Thr Lys Asn Gln Ile
             100                 105                 110
```


743

```
Leu Phe Leu Asn Ser Phe Ala Ile Lys Arg Ala Gly Ala Met Tyr Val
        115                 120             125
Asn Gly Asn Phe Asp Leu Ser Glu Asn His Gly Ser Ile Ile Phe Ser
    130             135                 140
Gly Asn Leu Ser Phe Pro Asn Ala Ser Asn Phe Ala Asp Thr Cys Thr
145             150                 155                 160
Gly Gly Ala Val Leu Cys Ser Lys Asn Val Thr Ile Ser Lys Asn Gln
            165                 170                 175
Gly Thr Ala Tyr Phe Ile Asn Asn Lys Ala Lys Ser Ser Gly Gly Ala
            180                 185                 190
Ile Gln Ala Ala Ile Ile Asn Ile Lys Asp Asn Thr Gly Pro Cys Leu
        195                 200                 205
Phe Phe Asn Asn Ala Ala Gly Gly Thr Ala Gly Gly Ala Leu Phe Ala
    210                 215                 220
Asn Ala Cys Arg Ile Glu Asn Asn Ser Gln Pro Ile Tyr Phe Leu Asn
225                 230                 235                 240
Asn Gln Ser Gly Leu Gly Gly Ala Ile Arg Val His Gln Glu Cys Ile
                245                 250                 255
Leu Thr Lys Asn Thr Gly Ser Val Ile Phe Asn Asn Asn Phe Ala Met
            260                 265                 270
Glu Ala Asp Ile Ser Ala Asn His Ser Ser Gly Gly Ala Ile Tyr Cys
        275                 280                 285
Ile Ser Cys Ser Ile Lys Asp Asn Pro Gly Ile Ala Ala Phe Asp Asn
    290                 295                 300
Asn Thr Ala Ala Arg Asp Gly Gly Ala Ile Cys Thr Gln Ser Leu Thr
305                 310                 315                 320
Ile Gln Asp Ser Gly Pro Val Tyr Phe Thr Asn Asn Gln Gly Thr Trp
                325                 330                 335
Gly Gly Ala Ile Met Leu Arg Gln Asp Gly Ala Cys Thr Leu Phe Ala
            340                 345                 350
Asp Gln Gly Asp Ile Ile Phe Tyr Asn Asn Arg His Phe Lys Asp Thr
        355                 360                 365
Phe Ser Asn His Val Ser Val Asn Cys Thr Arg Asn Val Ser Leu Thr
    370                 375                 380
Val Gly Ala Ser Gln Gly His Ser Ala Thr Phe Tyr Asp Pro Ile Leu
385                 390                 395                 400
Gln Arg Tyr Thr Ile Gln Asn Ser Ile Gln Lys Phe Asn Pro Asn Pro
                405                 410                 415
Glu His Leu Gly Thr Ile Leu Phe Ser Ser Thr Tyr Ile Pro Asp Thr
            420                 425                 430
Ser Thr Ser Arg Asp Asp Phe Ile Ser His Phe Arg Asn His Ile Gly
        435                 440                 445
Leu Tyr Asn Gly Thr Leu Ala Leu Glu Asp Arg Ala Glu Trp Lys Val
    450                 455                 460
Tyr Lys Phe Asp Gln Phe Gly Gly Thr Leu Arg Leu Gly Ser Arg Ala
465                 470                 475                 480
Val Phe Ser Thr Thr Asp Glu Glu Gln Ser Ser Ser Ser Val Gly Ser
                485                 490                 495
Val Ile Asn Ile Asn Asn Leu Ala Ile Asn Leu Pro Ser Ile Leu Gly
            500                 505                 510
Asn Arg Val Ala Pro Lys Leu Trp Ile Arg Pro Thr Gly Ser Ser Ala
        515                 520                 525
Pro Tyr Ser Glu Asp Asn Asn Pro Ile Ile Asn Leu Ser Gly Pro Leu
    530                 535                 540
Ser Leu Leu Asp Asp Glu Asn Leu Asp Pro Tyr Asp Thr Ala Asp Leu
545                 550                 555                 560
Ala Gln Pro Ile Ala Glu Val Pro Leu Leu Tyr Leu Leu Asp Val Thr
                565                 570                 575
Ala Lys His Ile Asn Thr Asp Asn Phe Tyr Pro Glu Gly Leu Asn Thr
        580                 585                 590
```

744

```
Thr Gln His Tyr Gly Tyr Gln Gly Val Trp Ser Pro Tyr Trp Ile Glu
        595             600             605
Thr Ile Thr Thr Ser Asp Thr Ser Ser Glu Asp Thr Val Asn Thr Leu
        610             615             620
His Arg Gln Leu Tyr Gly Asp Trp Thr Pro Thr Gly Tyr Lys Val Asn
625             630             635             640
Pro Glu Asn Lys Gly Asp Ile Ala Leu Ser Ala Phe Trp Gln Ser Phe
            645             650             655
His Asn Leu Phe Ala Thr Leu Arg Tyr Gln Thr Gln Gln Gly Gln Ile
            660             665             670
Ala Pro Thr Ala Ser Gly Glu Ala Thr Arg Leu Phe Val His Gln Asn
        675             680             685
Ser Asn Asn Asp Ala Lys Gly Phe His Met Glu Ala Thr Gly Tyr Ser
        690             695             700
Leu Gly Thr Thr Ser Asn Thr Ala Ser Asn His Ser Phe Gly Val Asn
705             710             715             720
Phe Ser Gln Leu Phe Ser Asn Leu Tyr Glu Ser His Ser Asp Asn Ser
            725             730             735
Val Ala Ser His Thr Thr Thr Val Ala Leu Gln Ile Asn Asn Pro Trp
        740             745             750
Leu Gln Glu Arg Phe Ser Thr Ser Ala Ser Leu Ala Tyr Ser Tyr Ser
        755             760             765
Asn His His Ile Lys Ala Ser Gly Tyr Ser Gly Lys Ile Gln Thr Glu
        770             775             780
Gly Lys Cys Tyr Ser Thr Thr Leu Gly Ala Ala Leu Ser Cys Ser Leu
785             790             795             800
Ser Leu Gln Trp Arg Ser Arg Pro Leu His Phe Thr Pro Phe Ile Gln
            805             810             815
Ala Ile Ala Val Arg Ser Asn Gln Thr Ala Phe Gln Glu Ser Gly Asp
        820             825             830
Lys Ala Arg Lys Phe Ser Val His Lys Pro Leu Tyr Asn Leu Thr Val
        835             840             845
Pro Leu Gly Ile Gln Ser Ala Trp Glu Ser Lys Phe Arg Leu Pro Thr
850             855             860
Tyr Trp Asn Ile Glu Leu Ala Tyr Gln Pro Val Leu Tyr Gln Gln Asn
865             870             875             880
Pro Glu Ile Asn Val Ser Leu Glu Ser Ser Gly Ser Ser Trp Leu Leu
            885             890             895
Ser Gly Thr Thr Leu Ala Arg Asn Ala Ile Ala Phe Lys Gly Arg Asn
        900             905             910
Gln Ile Phe Ile Phe Pro Lys Leu Ser Val Phe Leu Asp Tyr Gln Gly
        915             920             925
Ser Val Ser Ser Ser Thr Thr Thr His Tyr Leu His Ala Gly Thr Thr
930             935             940
Phe Lys Phe
945


        <210> 474
        <211> 778
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 474
Glu Val Phe Met Ala Ser Gly Ile Gly Gly Ser Ser Gly Leu Gly Lys
1               5               10              15
Ile Pro Pro Lys Asp Asn Gly Asp Arg Ser Arg Ser Pro Ser Pro Lys
            20              25              30
Gly Glu Leu Gly Ser His Glu Ile Ser Leu Pro Pro Gln Glu His Gly
        35              40              45
Glu Glu Gly Ala Ser Gly Ser Ser His Ile His Ser Ser Ser Ser Phe
    50              55              60
```

```
Leu Pro Glu Asp Gln Glu Ser Gln Ser Ser Ser Ser Ala Ala Ser Ser
65              70              75                      80
Pro Gly Phe Phe Ser Arg Val Arg Ser Gly Val Asp Arg Ala Leu Lys
            85              90                      95
Ser Phe Gly Asn Phe Phe Ser Ala Glu Ser Thr Ser Gln Ala Arg Glu
            100             105             110
Thr Arg Gln Ala Phe Val Arg Leu Ser Lys Thr Ile Thr Ala Asp Glu
            115             120             125
Arg Arg Asp Val Asp Ser Ser Ser Ala Ala Ala Thr Glu Ala Arg Val
    130             135             140
Ala Glu Asp Ala Ser Val Ser Gly Glu Asn Pro Ser Gln Gly Val Pro
145             150             155             160
Glu Thr Ser Ser Gly Pro Glu Pro Gln Arg Leu Phe Ser Leu Pro Ser
            165             170             175
Val Lys Lys Gln Ser Gly Leu Gly Arg Leu Val Gln Thr Val Arg Asp
            180             185             190
Arg Ile Val Leu Pro Ser Gly Ala Pro Pro Thr Asp Ser Glu Pro Leu
        195             200             205
Ser Leu Tyr Glu Leu Asn Leu Arg Leu Ser Ser Leu Arg Gln Glu Leu
    210             215             220
Ser Asp Ile Gln Ser Asn Asp Gln Leu Thr Pro Glu Glu Lys Ala Glu
225             230                 235                 240
Ala Thr Val Thr Ile Gln Gln Leu Ile Gln Ile Thr Glu Phe Gln Cys
            245             250             255
Gly Tyr Met Glu Ala Thr Gln Ser Ser Val Ser Leu Ala Glu Ala Arg
            260             265             270
Phe Lys Gly Val Glu Thr Ser Asp Glu Ile Asn Ser Leu Cys Ser Glu
            275             280             285
Leu Thr Asp Pro Glu Leu Gln Glu Leu Met Ser Asp Gly Asp Ser Leu
            290             295             300
Gln Asn Leu Leu Asp Glu Thr Ala Asp Asp Leu Glu Ala Ala Leu Ser
305             310             315             320
His Thr Arg Leu Ser Phe Ser Leu Asp Asp Asn Pro Thr Pro Ile Asp
            325             330             335
Asn Asn Pro Thr Leu Ile Ser Gln Glu Glu Pro Ile Tyr Glu Glu Ile
            340             345             350
Gly Gly Ala Ala Asp Pro Gln Arg Thr Arg Glu Asn Trp Ser Thr Arg
            355             360             365
Leu Trp Asn Gln Ile Arg Glu Ala Leu Val Ser Leu Leu Gly Met Ile
    370             375             380
Leu Ser Ile Leu Gly Ser Ile Leu His Arg Leu Arg Ile Ala Arg His
385             390             395             400
Ala Ala Ala Glu Ala Val Gly Arg Cys Cys Thr Cys Arg Gly Glu Glu
            405             410             415
Cys Thr Ser Ser Glu Glu Asp Ser Met Ser Val Gly Ser Pro Ser Glu
            420             425             430
Ile Asp Glu Thr Glu Arg Thr Gly Ser Pro His Asp Val Pro Arg Arg
            435             440             445
Asn Gly Ser Pro Arg Glu Asp Ser Pro Leu Met Asn Ala Leu Val Gly
    450             455             460
Trp Ala His Lys His Gly Ala Lys Thr Lys Glu Ser Ser Glu Ser Ser
465             470             475             480
Thr Pro Glu Ile Ser Ile Ser Ala Pro Ile Val Arg Gly Trp Ser Gln
            485             490             495
Asp Ser Ser Val Ser Phe Ile Val Met Glu Asp Asp His Ile Phe Tyr
            500             505             510
Asp Val Pro Arg Arg Lys Asp Gly Ile Tyr Asp Val Pro Ser Ser Pro
            515             520             525
Arg Trp Ser Pro Ala Arg Glu Leu Glu Glu Asp Val Phe Gly Asp Tyr
    530             535             540
```

746

```
Glu Val Pro Ile Thr Ser Ala Glu Pro Ser Lys Asp Lys Asn Ile Tyr
545                 550             555                 560
Met Thr Pro Arg Leu Ala Thr Pro Ala Ile Tyr Asp Leu Pro Ser Arg
            565             570                 575
Pro Gly Ser Ser Gly Ser Ser Arg Ser Pro Ser Ser Asp Arg Val Arg
            580             585             590
Ser Ser Ser Pro Asn Arg Arg Gly Val Pro Leu Pro Pro Val Pro Ser
            595             600             605
Pro Ala Met Ser Glu Glu Gly Ser Ile Tyr Glu Asp Met Ser Gly Ala
        610             615             620
Ser Gly Ala Gly Glu Ser Asp Tyr Glu Asp Met Ser Arg Ser Pro Ser
625             630             635                 640
Pro Arg Gly Asp Leu Asp Glu Pro Ile Tyr Ala Asn Thr Pro Glu Asp
            645             650             655
Asn Pro Phe Thr Gln Arg Asn Ile Asp Arg Ile Leu Gln Glu Arg Ser
            660             665             670
Gly Gly Ala Ser Ala Ser Pro Val Glu Pro Ile Tyr Asp Glu Ile Pro
            675             680             685
Trp Ile His Gly Arg Pro Pro Ala Thr Leu Pro Arg Pro Glu Asn Thr
        690             695             700
Leu Thr Asn Val Ser Leu Arg Val Ser Pro Gly Phe Gly Pro Glu Val
705             710             715                 720
Arg Ala Ala Leu Leu Ser Glu Ser Val Ser Ala Val Met Val Glu Ala
            725             730             735
Glu Ser Ile Val Pro Pro Thr Glu Pro Gly Asp Gly Glu Ser Glu Tyr
            740             745             750
Leu Glu Pro Leu Gly Gly Leu Val Ala Thr Thr Lys Ile Leu Leu Gln
            755             760             765
Lys Gly Trp Pro Arg Gly Glu Ser Asn Ala
770                 775
```

```
<400> 475
Gly Ser Ile Met Ala Val Gly Gly Val Gly Gly Ser Arg Ser Pro Ser
1               5               10              15
Pro Ile Pro Pro Asn Arg Arg Asn Ser Glu Asp Gly Lys Val Ser Pro
            20              25              30
Lys Asp Asn Leu Gly Glu His Thr Val Ser Ser Ser Asp Ser Ser Leu
        35              40              45
Ala Ser Gln Gly Pro Thr Ile Glu Glu Arg Lys Ala Gln Leu Gly Gly
        50              55              60
Thr Asp Lys Ile Pro Leu Pro Ser Val Lys Glu Pro Gly Asp Ser Gln
65              70              75              80
Thr Ser Gly Arg Ser Gly Val Leu Gln Arg Ile Trp Lys Gly Val Lys
            85              90              95
Gly Val Phe Lys Lys Thr Pro Gln Ala Arg Pro Glu Val Ser Ser Pro
            100             105             110
Arg Leu Pro Ser His Val Gln His Gly Gln Arg Leu Pro Gly Leu Glu
        115             120             125
Gly Phe Arg Asp Arg Ile Gln Lys Arg Ser Glu Asn Pro Glu Ala Asp
        130             135             140
Leu Gly Lys Met Lys Arg Ser Tyr Ser Asp Gly Asp Leu Asp Arg Val
145             150             155             160
Gly His Asp Ser Asn Glu Asp Ser Thr Glu Asp Ser Arg Ser Glu Gly
            165             170             175
Gly Glu Pro Ser Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly
            180             185             190
```

```
Ala Val Ser Lys Val His Gly Ala Leu Gly Asp Ile Lys Gly Lys Phe
        195             200             205
Gln Arg Ser Ala Ser Glu Asp Asp Leu Thr Thr Gln Gly Glu Asp Ser
    210             215             220
Ala Gly Asp Thr Val Lys Glu Arg Arg Ser Glu Glu Ala Glu Ala Ser
225             230             235             240
Ser Lys Ser Ser Ser Phe Leu Ser Gly Val Arg Gly Ala Thr Ser Thr
                245             250             255
Val Gln Gly Ala Leu Gly Asp Ala Lys Glu Lys Val Ser Ala Phe Gly
            260             265             270
Glu Gln Ala Ala Gly Ala Ile Arg Ser Ala Pro Gly Asn Ile Arg Thr
        275             280             285
Arg Phe Gln Arg Ser Ser Ser Glu Gly Asp Leu Ser Asn Val Asn Lys
    290             295             300
Ala Ala Lys His Leu Arg Lys Ala Leu Glu Asn Leu Glu Lys Val Ala
305             310             315             320
Pro Glu Gln Val Ser Pro Glu Val Ala Ser Arg Val Gln Ser Leu Leu
            325             330             335
Ala Arg Met Glu Gln Leu Thr His Gln Glu Pro Pro Thr Val Glu Asp
        340             345             350
Leu Ile Thr Phe Val Glu Ser Asn Val Gly Ser Asp Ser Val Glu Tyr
        355             360             365
Ala Ser Ile Val Pro Gln Asp Gly Ser Gln Ala Pro Ala Glu Thr Ala
    370             375             380
Glu Ala Pro Glu Thr Gly Gly Val Glu Gly Ser Ala Ala Gln Gly Ala
385             390             395             400
Trp Lys Ala Leu Arg Asp Phe Val Val Ser Ile Phe Gln Ala Val Ala
            405             410             415
Ser Phe Phe Arg Ala Ile Ala Ser Arg Leu Ser Ser Ala Arg Arg Glu
        420             425             430
Ser Ala Val Asp Asp Leu Ala Ser Glu Ser Asn Thr Gln Trp Phe Val
        435             440             445
Glu Gln Glu Gly Val Ser Asn Pro Ser Ala Ala Pro Ser Leu Ser Phe
    450             455             460
Ala Glu Glu Ile Ala Arg Arg Ala Ala Glu Met Ser Asn Arg Asn Ala
465             470             475             480
Gln Ser Leu Glu Lys Leu Glu Ser Gly Asn Val Thr Asp Pro Val Ile
            485             490             495
Gln Gln Gly Leu Gly Leu Ala Arg Ser Phe Ala Pro Glu Gly Gln
            500             505             510


        <210> 476
        <211> 598
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 476
Leu Lys Ile Ile Ile Ser Ile Ser Phe Met Ser Thr Ser Pro Ile Ser
1               5               10              15
Asn Asp Pro Arg Tyr Leu Ser Leu Ser Asn Ala Thr Glu Lys Thr Ser
            20              25              30
Leu Leu Ala Asn Ser Arg Ser Leu Ser Pro Val Pro Asn Ser Leu Val
        35              40              45
Pro Ser Asn Pro Glu Asp Thr Gly Leu Arg Lys Ser Ile Phe Thr His
        50              55              60
Ser Val Thr Leu Phe Ala Gly Leu Val Val Leu Leu Val Ala Val Ser
65              70              75              80
Val Val Val Val Ala Leu Thr Val Leu Ala Pro Gly Val Pro Gln Ala
                85              90              95
Ile Leu Leu Gly Ile Ala Ile Ser Gly Val Gly Ile Gly Gly Phe Ser
        100             105             110
```

748

```
Ile Met Lys Ser Leu Val Tyr Met Val Arg Asp Tyr Met Ser Pro Arg
        115                 120                 125
Met Gln Glu Ser Ser Arg Ile Lys Ser Ala Leu Ala Val Gly Thr Gly
        130                 135                 140
Phe Thr Val Met Gly Leu Val Met Lys Val Gly Ala Asn Phe Val Pro
145                 150                 155                 160
Gly Gly Tyr Gly Gly Leu Val Gly Ser Leu Gly Ser Ser Ala Tyr Ser
                165                 170                 175
Arg Gly Ser Gln Thr Thr Leu Ala Ser Phe Ser His Tyr Ile Tyr Thr
                180                 185                 190
Lys Phe Phe Arg Ser Glu Lys Val Ala Lys Gly Glu Lys Leu Thr Glu
        195                 200                 205
Ala Glu Thr Ile Lys Glu Ala Lys Lys Leu His Tyr Ile Thr Leu Ser
        210                 215                 220
Ile Ala Thr Ile Gly Val Gly Leu Ala Val Leu Gly Ile Leu Leu Ala
225                 230                 235                 240
Ile Ala Gly Thr Val Leu Leu Gly Gly Ala Pro Ala Thr Ile Ala Ile
                245                 250                 255
Ile Leu Ala Pro Pro Leu Ile Ser Ile Gly Leu Thr Thr Val Leu Gln
        260                 265                 270
Thr Ile Leu His Ser Ser Ile Gly Lys Trp Arg Ala Phe Leu Leu Thr
        275                 280                 285
Gln Glu Lys Lys Asp Leu Phe Val Asp Thr Ser Leu Lys Asp Ile Arg
        290                 295                 300
Leu Glu Lys Leu Pro Pro Ser Glu Val Glu Glu Ser Glu Thr Ser Gln
305                 310                 315                 320
Ser Val Ile Glu Val Pro Asp Ser Glu Gly Ile Ala Glu Thr Arg Ile
                325                 330                 335
Ser Ala Glu Glu Ile Asp Thr Arg Leu Ser Leu Thr Thr Arg Gln Lys
                340                 345                 350
Val Ile Phe Ala Leu Ala Thr Leu Leu Leu Leu Ala Ser Ile Ala Ala
        355                 360                 365
Phe Ile Val Thr Gly Phe Gly Gly Leu Thr Val Met Gln Val Leu Leu
        370                 375                 380
Val Ala Ser Val Gly Ser Ala Val Ala Ser Val Thr Leu Pro Met Val
385                 390                 395                 400
Ser Ser Gly Phe Ser Tyr Val Ala Tyr Gln Leu Lys Ala Arg Leu Asn
                405                 410                 415
Ile Ser Lys Leu Arg Trp Lys Glu Ala Lys Asn Lys Lys Arg Val Arg
        420                 425                 430
Gln Phe Leu Ile Glu Ser Gly Val Ile Ala Ser Asp Arg Glu Phe Asn
        435                 440                 445
Gln Met Trp Lys Thr Val Tyr Lys Lys Gln Ile Gln Lys Thr Asp Ala
        450                 455                 460
Ala Ile Arg Glu Glu Val Arg Asn Phe Glu Lys Gly Gly Glu Val Asn
465                 470                 475                 480
Ser Ala Leu Val Gly Gly Ile Leu Leu Gly Val Gly Thr Gly Ile Met
                485                 490                 495
Leu Leu Ala Leu Val Pro Ala Phe Ala Pro Ile Val Pro Gly Ile Leu
        500                 505                 510
Ala Leu Gly Gly Ser Thr Leu Gly Ile Ala Gly Ser Ile Leu Met Arg
        515                 520                 525
Lys Phe Val Asn Trp Leu Tyr Asp Glu Leu Val Lys Leu Tyr Glu Arg
        530                 535                 540
Arg Arg Asn Arg Arg Glu Leu Leu Tyr Gly Pro Glu Ser Lys Met Arg
545                 550                 555                 560
Ser Ile Ala Thr Asp Leu Val Val Glu Ala Leu Ala Ala Ser His Asp
                565                 570                 575
His Leu Phe Asp Leu Asp Gly Pro Val Asp Phe Ile Asp Val Asp Val
        580                 585                 590
```

749

```
Asp Ile Asp Gly Ala Ala
        595


    <210> 477
    <211> 722
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 477
Pro Ser Met Val Asp Lys Leu Ile His Pro Trp Asp Leu Asp Leu Leu
 1               5                  10                  15
Val Ser Gly Arg Gln Lys Asp Pro His Lys Leu Leu Gly Ile Leu Ala
            20                  25                  30
Ser Glu Asp Ser Ser Asp His Ile Val Ile Phe Arg Pro Gly Ala His
        35                  40                  45
Thr Val Ala Ile Glu Leu Leu Gly Glu Leu His His Ala Val Ala Tyr
    50                  55                  60
Arg Ser Gly Leu Phe Phe Leu Ser Val Pro Lys Gly Ile Gly His Gly
65                  70                  75                  80
Asp Tyr Arg Val Tyr His Gln Asn Gly Leu Leu Ala His Asp Pro Tyr
                85                  90                  95
Ala Phe Pro Pro Leu Trp Gly Glu Ile Asp Ser Phe Leu Phe His Arg
            100                 105                 110
Gly Thr His Tyr Arg Ile Tyr Glu Arg Met Gly Ala Ile Pro Met Glu
        115                 120                 125
Val Gln Gly Ile Ser Gly Val Leu Phe Val Leu Trp Ala Pro His Ala
    130                 135                 140
Gln Arg Val Ser Val Val Gly Asp Phe Asn Phe Trp His Gly Leu Val
145                 150                 155                 160
Asn Pro Leu Arg Lys Ile Ser Asp Gln Gly Ile Trp Glu Leu Phe Val
                165                 170                 175
Pro Gly Leu Gly Glu Gly Ile Arg Tyr Lys Trp Glu Ile Val Thr Gln
            180                 185                 190
Ser Gly Asn Val Ile Val Lys Thr Asp Pro Tyr Gly Lys Ser Phe Asp
        195                 200                 205
Pro Pro Pro Gln Gly Thr Ala Arg Val Ala Asp Ser Glu Ser Tyr Ser
    210                 215                 220
Trp Ser Asp His Arg Trp Met Glu Arg Arg Ser Lys Gln Ser Glu Gly
225                 230                 235                 240
Pro Val Thr Ile Tyr Glu Val His Leu Gly Ser Trp Gln Trp Gln Glu
                245                 250                 255
Gly Arg Pro Leu Ser Tyr Ser Glu Met Ala His Arg Leu Ala Ser Tyr
            260                 265                 270
Cys Lys Glu Met His Tyr Thr His Val Glu Leu Leu Pro Ile Thr Glu
        275                 280                 285
His Pro Leu Asn Glu Ser Trp Gly Tyr Gln Val Thr Gly Tyr Tyr Ala
    290                 295                 300
Pro Thr Ser Arg Tyr Gly Thr Leu Gln Glu Phe Gln Tyr Phe Val Asp
305                 310                 315                 320
Tyr Leu His Lys Glu Asn Ile Gly Ile Ile Leu Asp Trp Val Pro Gly
                325                 330                 335
His Phe Pro Val Asp Ala Phe Ala Leu Ala Ser Phe Asp Gly Glu Pro
            340                 345                 350
Leu Tyr Glu Tyr Thr Gly His Ser Gln Ala Leu His Pro His Trp Asn
        355                 360                 365
Thr Phe Thr Phe Asp Tyr Ser Arg His Glu Val Thr Asn Phe Leu Leu
    370                 375                 380
Gly Ser Ala Leu Phe Trp Leu Asp Lys Met His Ile Asp Gly Leu Arg
385                 390                 395                 400
Val Asp Ala Val Ala Ser Met Leu Tyr Arg Asp Tyr Gly Arg Glu Asp
                405                 410                 415
```


                                750

```
Gly Glu Trp Thr Pro Asn Ile Tyr Gly Gly Lys Glu Asn Leu Glu Ser
            420                 425                 430
Ile Glu Phe Leu Lys His Leu Asn Ser Val Ile His Lys Glu Phe Ser
            435                 440                 445
Gly Val Leu Thr Phe Ala Glu Glu Ser Thr Ala Phe Pro Gly Val Thr
            450                 455                 460
Lys Asp Val Asp Gln Gly Gly Leu Gly Phe Asp Tyr Lys Trp Asn Leu
465                 470                 475                 480
Gly Trp Met His Asp Thr Phe His Tyr Phe Met Lys Asp Pro Met Tyr
                485                 490                 495
Arg Lys Tyr His Gln Lys Asp Leu Thr Phe Ser Leu Trp Tyr Ala Phe
                500                 505                 510
Gln Glu Ser Phe Ile Leu Pro Leu Ser His Asp Glu Val Val His Gly
            515                 520                 525
Lys Gly Ser Leu Val Asn Lys Leu Pro Gly Asp Thr Trp Thr Arg Phe
            530                 535                 540
Ala Gln Met Arg Val Leu Leu Ser Tyr Gln Ile Cys Leu Pro Gly Lys
545                 550                 555                 560
Lys Leu Leu Phe Met Gly Gly Glu Phe Gly Gln Tyr Gly Glu Trp Ser
                565                 570                 575
Pro Asp Arg Pro Leu Asp Trp Glu Leu Leu Asn His His Tyr His Lys
            580                 585                 590
Thr Leu Arg Asn Cys Val Ser Ala Leu Asn Ala Leu Tyr Ile His Gln
            595                 600                 605
Pro Tyr Leu Trp Met Gln Glu Ser Ser Gln Glu Cys Phe His Trp Val
            610                 615                 620
Asp Phe His Asp Ile Glu Asn Asn Val Ile Ala Tyr Tyr Arg Phe Ala
625                 630                 635                 640
Gly Ser Asn Arg Ser Ser Ala Leu Leu Cys Val His His Phe Ser Ala
                645                 650                 655
Ser Thr Phe Pro Ser Tyr Val Leu Arg Cys Glu Gly Val Lys His Cys
                660                 665                 670
Glu Leu Leu Leu Asn Thr Asp Asp Glu Ser Phe Gly Gly Ser Gly Lys
            675                 680                 685
Gly Asn Arg Ala Pro Val Val Cys Gln Asp Gln Gly Val Ala Trp Gly
            690                 695                 700
Leu Asp Ile Glu Leu Pro Pro Leu Ala Thr Val Ile Tyr Leu Val Thr
705                 710                 715                 720
Phe Phe


        <210> 478
        <211> 340
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 478
Gly Arg Gly Arg Arg Ala Asp Trp Gly Asp Cys Met Ile Asp Ile Met
1                   5                   10                  15
Gln His Phe Lys Pro Tyr Thr Met Val Pro Gly Gln Lys Leu Pro Ile
            20                  25                  30
Pro Gly Ser Leu Leu Tyr Ala Gln Val Phe Pro Thr Leu Trp Arg Leu
            35                  40                  45
Phe Ser Ser Lys His Glu Ile Leu Asn Glu Gln Thr Leu Gln Val Gln
    50                  55                  60
Gly Pro Leu Lys Arg Phe Ala Val Phe Gln Asp Leu His Arg Gly Gly
65                  70                  75                  80
Leu Ala Val Thr Ser Glu Arg Tyr Lys Tyr Tyr Leu Leu Pro Ser Gly
                85                  90                  95
Glu Cys Thr Gln Ser Ile Lys Gly Lys Leu Pro Ser Ala Ala Gln Ala
                100                 105                 110
```

```
Gly Pro Leu Leu Ser Leu Gly Val His Lys His Ala Asp Trp Gln Lys
        115                 120             125
Val Arg Cys Arg Arg Asp Leu Lys Glu Ile Leu Pro Leu Trp Phe Arg
        130                 135             140
Phe Ala Ala Met Ala Pro Lys Gly Ser Tyr Arg Asp Leu Glu Thr Thr
145              150                 155                     160
Ala Ile Gly Ser Leu Val Lys Thr Ala His Gln Arg Val Leu His Arg
        165                 170             175
Glu Thr Thr Glu Ile Ala Pro Ala Leu Leu Ser Ile Ala Leu Ala Gly
        180                 185             190
Phe Ser Glu Cys Phe Leu Pro Arg Ser Tyr Asp Glu Glu Phe Gln Gly
        195                 200             205
Ile Leu Pro Gln Asp Gly Asp Pro Glu Gly Gly Val Pro Phe Glu Leu
        210                 215             220
Leu Ser Tyr Ser Phe Gly Met Ile Gln Asp Ile Phe Leu Arg His Gln
225              230                 235                     240
Gly Gln Leu Val Glu Ile Leu Pro Ala Leu Pro Pro Glu Phe Pro Cys
                245                 250                 255
Gly Arg Leu Ile His Val Ala Leu Pro Asn Leu Gly Thr Leu Ser Ile
        260                 265             270
Val Trp Thr Lys Lys Thr Ile Arg Gln Val Glu Leu His Ala Glu Tyr
        275                 280             285
Ser Gly Glu Val Phe Leu Lys Phe Cys Ser Ser Leu Cys Ser Ala Arg
        290                 295             300
Leu Arg Glu Trp Ser Glu Arg Arg Leu Ser Gly Ser Lys Arg Leu Ser
305              310                 315                     320
Leu Gly Glu Thr Leu Glu Ile Lys Ala Gly Thr Thr Tyr Leu Trp Asp
                325                 330                 335
Cys Phe His Lys
                340


        <210> 479
        <211> 423
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 479
Arg Tyr Met Thr Val Ala Glu Val Lys Gly Thr Phe Lys Leu Val Cys
  1             5                 10                  15
Leu Gly Cys Arg Val Asn Gln Tyr Glu Val Gln Ala Tyr Arg Asp Gln
        20                  25                  30
Leu Thr Ile Leu Gly Tyr Gln Glu Val Leu Asp Ser Glu Ile Pro Ala
        35                  40                  45
Asp Leu Cys Ile Ile Asn Thr Cys Ala Val Thr Ala Ser Ala Glu Ser
        50                  55                  60
Ser Gly Arg His Ala Val Arg Gln Leu Cys Arg Gln Asn Pro Thr Ala
65                  70                  75                  80
His Ile Val Val Thr Gly Cys Leu Gly Glu Ser Asp Lys Glu Phe Phe
                85                  90                  95
Ala Ser Leu Asp Arg Gln Cys Thr Leu Val Ser Asn Lys Glu Lys Ser
                100                 105                 110
Arg Leu Ile Glu Lys Ile Phe Ser Tyr Asp Thr Thr Phe Pro Glu Phe
        115                 120                 125
Lys Ile His Ser Phe Glu Gly Lys Ser Arg Ala Phe Ile Lys Val Gln
        130                 135                 140
Asp Gly Cys Asn Ser Phe Cys Ser Tyr Cys Ile Ile Pro Tyr Leu Arg
145                 150                 155                 160
Gly Arg Ser Val Ser Arg Pro Ala Glu Lys Ile Leu Ala Glu Ile Ala
                165                 170                 175
Gly Val Val Asp Gln Gly Tyr Arg Glu Val Val Ile Ala Gly Ile Asn
                180                 185                 190
```

752

```
Val Gly Asp Tyr Cys Asp Gly Glu Arg Ser Leu Ala Ser Leu Ile Glu
        195                 200             205
Gln Val Asp Arg Ile Pro Gly Ile Glu Arg Ile Arg Ile Ser Ser Ile
        210             215             220
Asp Pro Asp Asp Ile Thr Glu Asp Leu His Arg Ala Ile Thr Ser Ser
225             230             235             240
Arg His Thr Cys Pro Ser Ser His Leu Val Leu Gln Ser Gly Ser Asn
            245             250             255
Ser Ile Leu Lys Arg Met Asn Arg Lys Tyr Ser Arg Gly Asp Phe Leu
        260             265             270
Asp Cys Val Glu Lys Phe Arg Ala Ser Asp Pro Arg Tyr Ala Phe Thr
        275             280             285
Thr Asp Val Ile Val Gly Phe Pro Gly Glu Ser Asp Gln Asp Phe Glu
        290             295             300
Asp Thr Leu Arg Ile Ile Glu Asp Val Gly Phe Ile Lys Val His Ser
305             310             315             320
Phe Pro Phe Ser Ala Arg Arg Arg Thr Lys Ala Tyr Thr Phe Asp Asn
                325                 330                 335
Gln Ile Pro Asn Gln Val Ile Tyr Glu Arg Lys Lys Tyr Leu Ala Glu
        340             345             350
Val Ala Lys Arg Val Gly Gln Lys Glu Met Met Lys Arg Leu Gly Glu
        355             360             365
Thr Thr Glu Val Leu Val Glu Lys Val Thr Gly Gln Val Ala Thr Gly
        370             375             380
His Ser Pro Tyr Phe Glu Lys Val Ser Phe Pro Val Val Gly Thr Val
385             390             395             400
Ala Ile Asn Thr Leu Val Ser Val Arg Leu Asp Arg Val Glu Glu Glu
            405             410             415
Gly Leu Ile Gly Glu Ile Val
        420

        <210> 480
        <211> 477
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 480
Trp His Gly Gly Pro Leu Asp Thr Ile Asp Thr Pro Gly Glu Gln Gly
1               5               10              15
Ser Gln Ser Phe Gly Asn Ser Leu Gly Ala Arg Phe Asp Leu Pro Arg
            20              25              30
Lys Glu Gln Asp Pro Ser Gln Ala Leu Ala Val Ala Ser Tyr Gln Asn
        35              40              45
Lys Thr Asp Ser Gln Val Val Glu Glu His Leu Asp Glu Leu Ile Ser
        50              55              60
Leu Ala Asp Ser Cys Gly Ile Ser Val Leu Glu Thr Arg Ser Trp Ile
65              70              75              80
Leu Lys Thr Pro Ser Ala Ser Thr Tyr Ile Asn Val Gly Lys Leu Glu
            85              90              95
Glu Ile Glu Glu Ile Leu Lys Glu Phe Pro Ser Ile Gly Thr Leu Ile
            100             105             110
Ile Asp Glu Glu Ile Thr Pro Ser Gln Gln Arg Asn Leu Glu Lys Arg
        115             120             125
Leu Gly Leu Val Val Leu Asp Arg Thr Glu Leu Ile Leu Glu Ile Phe
        130             135             140
Ser Ser Arg Ala Leu Thr Ala Glu Ala Asn Ile Gln Val Gln Leu Ala
145             150             155             160
Gln Ala Arg Tyr Leu Leu Pro Arg Leu Lys Arg Leu Trp Gly His Leu
            165             170             175
Ser Arg Gln Lys Ser Gly Gly Gly Ser Gly Gly Phe Val Lys Gly Glu
        180             185             190
```

753

```
Gly Glu Lys Gln Ile Glu Leu Asp Arg Arg Met Val Arg Glu Arg Ile
    195                     200             205
His Lys Leu Ser Ala Gln Leu Lys Ala Val Ile Lys Gln Arg Ala Glu
    210                 215             220
Arg Arg Lys Val Lys Ser Arg Arg Gly Ile Pro Thr Phe Ala Leu Ile
225                 230             235                 240
Gly Tyr Thr Asn Ser Gly Lys Ser Thr Leu Leu Asn Leu Leu Thr Ala
                245             250                 255
Ala Asp Thr Tyr Val Glu Asp Lys Leu Phe Ala Thr Leu Asp Pro Lys
            260             265             270
Thr Arg Lys Cys Val Leu Pro Gly Gly Arg His Val Leu Leu Thr Asp
        275             280             285
Thr Val Gly Phe Ile Arg Lys Leu Pro His Thr Leu Val Ala Ala Phe
    290             295             300
Lys Ser Thr Leu Glu Ala Ala Phe His Glu Asp Val Leu Leu His Val
305             310             315                 320
Val Asp Ala Ser His Pro Leu Ala Leu Glu His Val Gln Thr Thr Tyr
                325                 330                 335
Asp Leu Phe Gln Glu Leu Lys Ile Glu Lys Pro Arg Ile Ile Thr Val
            340             345             350
Leu Asn Lys Val Asp Arg Leu Pro Gln Gly Ser Ile Pro Met Lys Leu
        355             360             365
Arg Leu Leu Ser Pro Leu Pro Val Leu Ile Ser Ala Lys Thr Gly Glu
    370             375             380
Gly Ile Gln Asn Leu Leu Ser Leu Met Thr Glu Ile Ile Gln Glu Lys
385             390             395                 400
Ser Leu His Val Thr Leu Asn Phe Pro Tyr Thr Glu Tyr Gly Lys Phe
            405             410             415
Thr Glu Leu Cys Asp Ala Gly Val Val Ala Ser Ser Arg Tyr Gln Glu
            420             425             430
Asp Phe Leu Val Val Glu Ala Tyr Leu Pro Lys Glu Leu Gln Lys Lys
        435             440             445
Phe Arg Pro Phe Ile Ser Tyr Val Phe Pro Glu Asp Cys Gly Asp Asp
    450             455             460
Glu Gly Arg Gly Pro Val Leu Glu Ser Ser Phe Gly Asp
465                 470                 475
```

          <210> 481
          <211> 273
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 481

```
Ala Ile Gly Met Val Arg Asp Ile Gln Ser Glu Ser Ile Gly Lys Leu
1               5               10              15
Val Phe Leu Gly Thr Gly Asn Pro Glu Gly Ile Pro Val Pro Phe Cys
            20              25              30
Ser Cys Arg Val Cys Gln Asn Thr Gly Ile His Arg Leu Arg Ser Ser
        35              40              45
Val Leu Ile Gln Tyr Gln Asn Lys Thr Leu Val Ile Asp Ala Gly Pro
    50              55              60
Asp Phe Arg Thr Gln Met Leu Val Ala Gly Val Ser Glu Leu Asp Gly
65              70              75              80
Val Phe Leu Thr His Pro His Tyr Asp His Ile Gly Gly Ile Asp Asp
            85              90              95
Leu Arg Ala Trp Tyr Ile Val Thr Gln Arg Ser Leu Pro Leu Val Leu
        100             105             110
Ser Ala Ser Thr Tyr Arg Phe Leu Asn Lys Ala Lys Glu Tyr Leu Phe
        115             120             125
Ala Thr Pro Asn Val Glu Ser Ser Leu Pro Ala Val Leu Glu Phe Thr
    130             135             140
```

```
Ile Leu Asn Glu Asp Cys Gly Gln Glu Glu Phe Gln Gly Ile Pro Tyr
145                 150                 155                 160
Thr Tyr Val Ser Tyr Tyr Gln Lys Ser Cys His Val Thr Gly Phe Arg
            165                 170                 175
Phe Gly Asn Leu Ala Tyr Leu Thr Asp Leu Cys Ser Tyr Asp Ala Lys
            180                 185                 190
Ile Phe Ser Tyr Leu Asp Asn Val Glu Thr Leu Ile Leu Ser Ala Gly
            195                 200                 205
Pro Ser Glu Thr Pro Ile Pro Phe Gln Gly His Lys Ser Ser His Leu
    210                 215                 220
Thr Val Glu Glu Ala Lys Ala Phe Ala Asn His Ala Gly Ile Lys Asn
225                 230                 235                 240
Leu Ile Ile Thr His Ile Ser His Cys Leu Glu Ala Glu Arg Asp Gln
                245                 250                 255
His Pro Glu Val Thr Phe Ala Tyr Asp Gly Met Glu Val Leu Trp Thr
            260                 265                 270
Leu
```

- -

```
Ser Asp Glu Arg Ile Ser Trp Gly Ile Ser Gly Arg Leu Gly Glu Phe
 1               5                   10                  15
Val Ser Lys Lys Glu Gln Asp Cys Met Leu Gly Ser Leu Pro Cys Tyr
            20                  25                  30
Pro Gly Ala Gly Asn Ile Glu Glu Tyr Lys Asn Arg Tyr Phe Tyr Cys
        35                  40                  45
Gln Leu Cys Ala Glu Val Val Ser Pro Tyr Val Val Pro Val Ile Val
    50                  55                  60
Val Asp Val Gln Gly Ala Pro Pro Thr Gly Ile Leu Gln Val Leu Arg
65                  70                  75                  80
Cys Lys Gln His Lys Phe Gln Gly Leu Pro Val His Gly Pro Ile Thr
                85                  90                  95
Ser Leu Trp Ala Leu Glu Pro Val Gly Lys Gly Ala Pro Gln Leu Glu
            100                 105                 110
Ser Ala Met Tyr Glu Leu Cys Ser Gln Val Arg Asn Phe Asp Ile Cys
            115                 120                 125
Ser Ile Val Ser Trp Val Phe Gly Gly Leu Cys Ile Phe Ala Gly Leu
    130                 135                 140
Ile Val Gly Val Met Val Glu Ala Pro Leu Ile Ala Gly Leu Ser Ala
145                 150                 155                 160
Trp Val Ile Pro Cys Ile Ile Gly Gly Val Gly Ala Ile Leu Cys Leu
            165                 170                 175
Phe Ala Ile Leu Met Ala Tyr Leu Gly Arg Gly Arg Val Arg Glu Trp
            180                 185                 190
Leu Asn Leu Ser His Glu Tyr Ile Thr Gln Cys His Cys Arg Gln Ile
    195                 200                 205
Gln Ala His Ser Gln Asn Tyr Ser Val Ile Thr Glu Tyr Pro Ala Thr
    210                 215                 220
Cys Ala Leu Ser Gln Pro Ile Thr Lys Leu Pro Asn Gly Ser Arg Arg
225                 230                 235                 240
Asp Asn
```

755

<210> 483
<211> 545
<212> PRT
<213> Chlamydia pneumoniae

<400> 483
```
Ser Cys Leu Arg Ile Glu Gly Ile Leu Met Ala Thr Ser Val Pro Val
1               5                   10                  15
Thr Ser Ser Thr Ser Val Gly Glu Ala Asn Ser Ser Asn Glu Arg Phe
            20                  25                  30
Thr Glu Arg Thr Ser Arg Met Tyr Tyr Ala Ala Leu Val Leu Gly Ala
        35                  40                  45
Leu Ser Cys Leu Ile Phe Ile Ala Met Ile Val Ile Phe Pro Gln Val
    50                  55                  60
Gly Leu Trp Ala Val Val Leu Gly Phe Ala Leu Gly Cys Leu Leu Leu
65                  70                  75                  80
Ser Leu Ala Ile Val Phe Ala Val Ser Gly Leu Val Leu Gly Lys Thr
                85                  90                  95
Leu Glu Pro Ser Arg Glu Ala Thr Pro Pro Glu Ile Val Ala Gln Lys
            100                 105                 110
Glu Trp Thr Thr Gln Gln Asp Val Leu Gly Asn Glu Tyr Trp Arg Ser
        115                 120                 125
Glu Leu Ile Ser Leu Phe Leu Arg Gly Asp Leu His Glu Ser Leu Ile
    130                 135                 140
Val Asp Ser Lys Asp Arg Ser Leu Asp Ile Asp Gln Ser Leu Gln Asn
145                 150                 155                 160
Ile Leu Lys Leu Glu Pro Leu Ser Thr Thr Leu Ser Leu Leu Lys Lys
                165                 170                 175
Asp Cys Val His Ile Asn Ile Ile Leu His Leu Val Arg Gln Trp Asn
                180                 185                 190
Leu Leu Gly Val Asp Leu Ser Pro Glu Val Thr Ala His Ala Glu Glu
            195                 200                 205
Leu Leu Leu Phe Leu Ile Glu Glu Gln Tyr Tyr Ser Pro Asp Ile Leu
        210                 215                 220
Lys Leu Ile Arg Tyr Gly Asp Ala Leu Gln Ala Thr Ser Pro Leu Met
225                 230                 235                 240
Asp Trp Ala Asp Ser Gly Ser Phe Ser Val Asp Ala Asp Gly Val Phe
                245                 250                 255
Ser Cys Arg Arg Glu Glu Cys Ser Pro Glu Asp Ala Leu Ala Gln Phe
                260                 265                 270
Asp Leu Leu Leu Ala Leu Glu Asn Pro Asp Arg Arg Phe Leu Lys Asp
            275                 280                 285
Ser Phe Leu Thr Tyr Ile Trp Ser Ser Ser Phe Phe Glu Lys Phe Leu
        290                 295                 300
His Arg His Leu Glu Ser Leu Gln Arg Lys Leu Pro Glu Thr Ala Ile
305                 310                 315                 320
Asp Val Ala Arg Tyr Glu Ala Gln Ile Gln Thr Phe Leu Ser Arg Tyr
                325                 330                 335
Phe Gln Lys Leu Asp Leu Ile Asn Ala Met Ser Leu Asp Trp Gly Tyr
            340                 345                 350
Asn Cys Ala Glu Gly Glu Lys Cys Tyr Glu Ser Ala Asn Gln Arg Leu
            355                 360                 365
Asp Asn Leu Phe Ile Ala Phe Ser Ser Ser Val Pro Ala Met Lys Arg
    370                 375                 380
Leu Phe Asp Lys Tyr Gly Ser Val Val Arg Val Asp Arg Arg Gln Ile
385                 390                 395                 400
Arg Glu Gln Ile Leu Ser Asn Thr Glu Ile Leu Glu Asn Glu Ser Gly
                405                 410                 415
Phe Leu Cys Ser Leu Tyr Glu Tyr Pro Leu Ser Tyr Leu Ile Asp Trp
            420                 425                 430
```

```
Ala Val Leu Leu Asp Cys Val Arg Gly Thr Glu Ile Ser Leu Glu Asp
        435                 440                 445
Gln Ala Asp Tyr Thr Val Cys Leu Gln Gly Leu Asp Ser Met Leu Ser
        450                 455                 460
Gln Phe Ala Ser Arg Leu Gln Ser Gly Gln Lys Val Leu Asn Pro Arg
465                 470                 475                 480
Asp Val Leu Ser Glu Gln Ala Ala Val Met Leu Val His Gly Leu Ala
                485                 490                 495
Ala Gln Gly Val Ser Phe Gln Gly Leu Lys Ala Leu Met Tyr Leu Thr
                500                 505                 510
Ala Val Pro Gln Arg Met Trp Leu Gly Ala Leu Pro Leu Phe Glu Ser
            515                 520                 525
Phe Pro Val Phe Asn Arg Met Lys Glu Phe Leu Gly Glu Ser Leu Gly
        530                 535                 540
Asp
545
```

```
Asn Leu Ala Tyr Arg Ala Gln Thr Phe Met Ile Lys Gln Ile Gly Arg
1                   5                   10                  15
Phe Phe Arg Ala Phe Ile Phe Ile Met Pro Leu Ser Leu Thr Ser Cys
            20                  25                  30
Glu Ser Lys Ile Asp Arg Asn Arg Ile Trp Ile Val Gly Thr Asn Ala
        35                  40                  45
Thr Tyr Pro Pro Phe Glu Tyr Val Asp Ala Gln Gly Glu Val Val Gly
    50                  55                  60
Phe Asp Ile Asp Leu Ala Lys Ala Ile Ser Glu Lys Leu Gly Lys Gln
65                  70                  75                  80
Leu Glu Val Arg Glu Phe Ala Phe Asp Ala Leu Ile Leu Asn Leu Lys
                85                  90                  95
Lys His Arg Ile Asp Ala Ile Leu Ala Gly Met Ser Ile Thr Pro Ser
            100                 105                 110
Arg Gln Lys Glu Ile Ala Leu Leu Pro Tyr Tyr Gly Asp Glu Val Gln
        115                 120                 125
Glu Leu Met Val Val Ser Lys Arg Ser Leu Glu Thr Pro Val Leu Pro
    130                 135                 140
Leu Thr Gln Tyr Ser Ser Val Ala Val Gln Thr Gly Thr Phe Gln Glu
145                 150                 155                 160
His Tyr Leu Leu Ser Gln Pro Gly Ile Cys Val Arg Ser Phe Asp Ser
                165                 170                 175
Thr Leu Glu Val Ile Met Glu Val Arg Tyr Gly Lys Ser Pro Val Ala
            180                 185                 190
Val Leu Glu Pro Ser Val Gly Arg Val Val Leu Lys Asp Phe Pro Asn
            195                 200                 205
Leu Val Ala Thr Arg Leu Glu Leu Pro Pro Glu Cys Trp Val Leu Gly
        210                 215                 220
Cys Gly Leu Gly Val Ala Lys Asp Arg Pro Glu Glu Ile Gln Thr Ile
225                 230                 235                 240
Gln Gln Ala Ile Thr Asp Leu Lys Ser Glu Gly Val Ile Gln Ser Leu
                245                 250                 255
Thr Lys Lys Trp Gln Leu Ser Glu Val Ala Tyr Glu
            260                 265
```

<210> 485
<211> 1045
<212> PRT
<213> Chlamydia pneumoniae

<400> 485

```
Ile Ile Leu Ile Lys Lys Arg Ala Ile Phe Glu Arg Met Phe Pro Ile
1               5                   10                  15
Pro Pro Pro His Cys Pro Pro Asn Asn Lys Asn Asn Phe Tyr His Leu
            20                  25                  30
Thr Thr Asp Thr Lys Asp Pro Leu Leu Leu Arg Ile Leu Arg Thr Ile
            35                  40                  45
Gly Tyr Val Leu Leu His Ile Ile Thr Leu Gly Leu Leu Leu Leu Ile
        50                  55                  60
His Tyr Tyr Lys His His Arg Val Val Arg Lys Glu Gly Leu Pro Thr
65              70                  75                  80
Pro Pro Thr Leu Pro Lys Gly Pro Glu Pro Lys Thr Ile Glu Ile Ala
                85                  90                  95
Lys Gln Pro Pro Lys Asp Gly Glu Asp Lys Lys Pro Asp Val Pro Lys
            100                 105                 110
Pro Gly Thr Pro Pro Pro Glu Asp Thr Pro Pro Pro Pro Pro Lys Ala
            115                 120                 125
Pro Ser Pro Ala Ser Pro Lys Val Pro Lys Gln Pro Ala Asp Lys Lys
        130                 135                 140
Pro Thr Pro Pro Pro Glu Ala Pro Pro Pro Pro Val Arg Val Ala Thr
145             150                 155                 160
Pro Met Pro Leu Arg Pro Ser Ser Gln Gly Tyr Trp Gln Cys Leu Asn
                165                 170                 175
Arg Met Val Ser Met Val Leu Arg Arg Ala Pro Leu Pro Leu Pro Ala
            180                 185                 190
Met Gln Val Asp Pro Ile Leu Gly Asp Phe Asn Pro His Phe Val Ala
            195                 200                 205
Ser Tyr Pro Asn Arg Ile Asp Asn Glu Pro Met Tyr Phe Gln Ile Lys
        210                 215                 220
Gln Phe Lys Lys Ile Ala Gln Asn Pro Asp Leu Pro Gln Gln His Arg
225                 230                 235                 240
Arg Leu Ala Gln Leu Ser Leu Glu Gln Ala Leu Tyr Leu Asn Asp Asn
                245                 250                 255
Tyr Tyr Leu Val Asn Val Pro Gly Asp Gly Asn Cys Phe Tyr Arg Ala
            260                 265                 270
Tyr Ala Val Gly Trp Leu Ser Ala Leu Tyr Glu Glu Ser Ser Arg Asn
            275                 280                 285
Asp Ile Val Phe Glu Gln Glu Ala Thr Arg Leu Leu Asp Leu Pro Phe
        290                 295                 300
Ala Ser Ser Ser Pro Ala Asn Ala Asn Leu Cys Ala Glu Met Ala Glu
305                 310                 315                 320
Leu Leu Gln Leu Cys Ser Thr Tyr Cys Ser Phe Ile Asp Leu Tyr Asp
                325                 330                 335
Gly Val Ile Leu Ser Gln Lys His Thr Ala Thr Leu Ile Ala Phe Leu
            340                 345                 350
Arg Lys Leu Ser Ala Tyr Ala Ile Arg Gln Gln Ile Ala Ala Ser Ser
            355                 360                 365
Asn Glu Glu Thr Ala Arg Ala Leu Phe Ile Ser Asp Met Gln Asp Asp
        370                 375                 380
Leu Leu Pro Ser Val Leu Glu Phe Leu Ala Ala Asn Arg Pro Tyr Ser
385                 390                 395                 400
Glu Leu Phe Gln Asn Leu Ile Asp His Ser Ala Leu Pro Tyr Met Gln
                405                 410                 415
Ser Arg Asp Lys Leu Phe Leu Leu Leu Glu His Leu Pro Ala Leu Phe
            420                 425                 430
```

758

```
Leu Thr Asp Ala Glu Leu Gln Lys Met Ser Pro Glu Asp Gln Gln Leu
        435             440             445
Arg Lys Gln Tyr Glu Arg Glu Ile Arg Glu Ala Phe Ala Lys Leu Ser
    450             455             460
Arg Arg Ile Ala Asp Ser Gly Trp Asp Thr Glu Arg Phe Asn Ala Ile
465             470             475             480
Val Lys Asp His Leu Pro Glu Ala Ile Arg Cys Gln Tyr Ser Arg Phe
            485             490             495
Leu Ala Thr Ile Glu Asn Arg Arg Ser Gly Asp Leu Pro Trp Ser Pro
            500             505             510
Ala Leu Ser Phe Phe Ala Phe Leu Cys Thr Cys Pro Ser Val Arg Phe
            515             520             525
His Lys Leu Cys Ala Thr Phe Tyr Lys Ser Leu Glu Asp Ile Ile Ile
            530             535             540
Ala Ser Ala Pro Pro Gln Arg Ser Ile Gln Glu Ile Leu Gln Ile Ser
545             550             555             560
Asn Ala Ser Leu Ser Tyr Leu Asn Glu Asp Leu Asp Ser Ser Trp Gln
                565             570             575
Arg Glu Val Ile Ser Ser Asn Ile Met Thr Ile Leu Thr Thr His Glu
            580             585             590
Ser Leu Thr Leu Glu Ser Ser Met Pro Gln Leu Glu Thr Leu His Lys
            595             600             605
Arg Ile Ala Asn Leu Leu Lys Asn Val Ile Ser Thr Ser Phe Glu Thr
    610             615             620
Pro Pro Leu Ser Asn Gln Pro Asp Leu Leu Ser Asn Leu Val Asn Lys
625             630             635             640
Leu Leu Val Ala Ile His Ser Lys Leu Glu Leu Lys Glu His Phe Asn
            645             650             655
Thr Val Cys Ser Ala Arg Ser Leu Arg Leu Thr Arg Asp Glu Gly Ser
            660             665             670
Gly Leu Ser Gln Glu Gln Asp Leu Leu Tyr Thr Gln Ala Val Gln Leu
            675             680             685
Leu Phe Phe Ile Leu Gln His Pro Gln Val Asn Asn Arg Pro Glu Thr
            690             695             700
Lys Asp Ala Val Lys Glu Leu Lys Met Leu Leu Leu Pro Phe Leu Gln
705             710             715             720
Tyr Ala Phe Lys Lys Val Glu Asn Glu Lys Lys Leu Gln Lys Leu Leu
            725             730             735
Arg Ser Ile Leu Gly Ser Leu Val Leu Lys Pro Pro Ala Arg Tyr Pro
            740             745             750
Ser Thr Pro Ser Asn Lys Asp Lys Glu Thr Phe Cys Lys Phe Trp Ser
            755             760             765
Arg His Pro Glu Val Met Val Leu Asp Pro Ile Leu Glu Lys Asn Cys
    770             775             780
Met Gln Phe Leu Arg Ala Thr Phe Pro Asn Tyr Gln Leu Glu Thr Glu
785             790             795             800
Ala Ile Leu Leu Glu Lys Glu Ile Glu Ser Thr Phe Arg Asn Gly Trp
            805             810             815
Asn Val Phe Leu Thr Arg Leu Asn Leu Phe Gly Ser Lys Leu Gly Ser
            820             825             830
Pro Ser Ser Pro Thr Ala Leu Ser Asp Gln Phe Ser Lys Ser Phe Leu
            835             840             845
Ile Phe Cys Phe Leu Asn Asn Tyr Pro Lys Leu Leu Gln Lys Lys Thr
    850             855             860
Pro Leu Ala Ala Arg Leu Asp Ala Phe Gln Arg Glu Ala Ser His Arg
865             870             875             880
Phe Thr Gln Val Lys Asp Lys Leu Leu Leu Ser Leu Lys Tyr Gly Phe
            885             890             895
Pro Leu Ala Thr Ala Thr Ile Asn Gln Tyr Ser Arg Ala Arg Asp Gln
            900             905             910
```

```
Leu Ile Cys Asn Leu Leu Lys Asn Thr Val Thr Ala Ser Asp Gly Phe
        915             920             925
Cys Arg Ser Gly Phe Arg Gln Ser Leu Ile Gly Tyr Leu His Ser Leu
        930             935             940
Ser Ser Asn Glu Leu Gly Asp Ile Leu Asp Asp Val Lys Glu Gln Ala
945             950             955             960
Glu Ala Asn Asp Val Ala Ala Met Thr Thr Val Pro Leu Gln Pro Phe
                965             970             975
Ala Val Cys Leu Ile Met Ser Asp Arg Asp Thr Val Ser Glu Glu Asn
            980             985             990
Ile Glu Asn Phe Val Ala Met His Gly Phe Leu Asn Thr Ile Ser Pro
            995             1000            1005
Glu Arg Asp Ala Arg Ile Phe Leu Ile Arg Phe Pro Asn His Tyr Gly
        1010            1015            1020
Cys Leu Leu Pro Arg Asn Pro Arg Thr Glu Asp Gln Asn Ser Lys Pro
1025            1030            1035            1040
Asp Ser Ser Asn Pro
                1045
```

```
Arg Ser Glu Leu Lys Thr Gly Gln Leu Lys Ser Leu Val Leu His Glu
1               5               10              15
Val Leu Ile Leu Thr Phe Thr Tyr Pro Leu Pro Arg Thr Leu Lys Gln
            20              25              30
His Pro Asp Glu Val His Thr Val Pro Ile Ser Pro Asn Leu Ser Phe
        35              40              45
Gly Glu Gly Ser Pro Ile Leu Ile Ala Gly Pro Cys Thr Leu Glu Ser
        50              55              60
Tyr Glu His Thr Val Ser Ser Ala Leu Thr Val Lys Glu Ala Gly Ala
65              70              75              80
Gln Val Phe Arg Gly Ser Ile Arg Lys Pro Arg Thr Ser Pro Phe Ser
                85              90              95
Phe Gln Gly Trp Glu Lys Glu Cys Val Leu Trp His Lys Glu Ala Gln
            100             105             110
Ser Ile His Gly Leu Pro Thr Glu Thr Glu Val Leu Asp Val Arg Asp
        115             120             125
Val Glu Ile Thr Ala Glu His Val Asp Ile Leu Arg Ile Gly Ala Lys
        130             135             140
Asn Met His Asn Thr Pro Leu Leu Gln Glu Val Ser Lys Ser His Arg
145             150             155             160
Pro Ile Ile Leu Lys Arg Ser Pro Ala Ala Thr Leu Glu Glu Trp Leu
                165             170             175
Cys Ala Ala Glu Tyr Ile Leu Ala Ser Ser Pro Ser Cys Pro Gly Val
            180             185             190
Ile Leu Cys Glu Arg Gly Ile Arg Thr Phe Glu His Ser Thr Arg Tyr
        195             200             205
Thr Leu Asp Leu Asn Thr Val Ala Leu Leu Lys Glu Ile Ser Ser Leu
        210             215             220
Pro Val Ile Val Asp Pro Ser His Ala Ala Gly Lys Arg Ser Leu Val
225             230             235             240
Leu Pro Leu Ala Ser Ala Gly Leu Ser Val Gly Ala Asp Gly Leu Met
                245             250             255
Ile Glu Val His Ala His Pro Glu Lys Ala Leu Cys Asp Ala Lys Gln
            260             265             270
Gln Ile Thr Pro Glu Glu Leu His Leu Phe Ala Lys Lys His Phe Cys
        275             280             285
```

Pro Ser Glu Ser Arg Ala His Ala Ile Ser
    290   295

<210> 487
<211> 79
<212> PRT
<213> Chlamydia pneumoniae

<400> 487
Gln Pro Ile Gly Arg Thr Pro Thr Arg Val Phe Leu Trp Arg Phe Met
  1   5   10   15
Ile Lys Gln Ala Cys Lys Phe Tyr Leu Leu Gln Cys Leu Leu Cys Ala
             20   25   30
Leu Tyr Trp Leu Leu Lys Tyr Cys Arg Lys Leu Leu Lys Gly Thr Leu
         35   40   45
His His Ser Glu Glu Thr Leu Tyr Gln Ala Leu Leu Ser Ser Leu Ile
     50   55   60
Asp Leu Leu Tyr Gln Leu Lys Gln Leu Pro Ala Pro Thr Asn Glu
65   70   75

<210> 488
<211> 465
<212> PRT
<213> Chlamydia pneumoniae

<400> 488
Ala Gln His Arg Ser Leu Leu Lys Gly Asn Ile Phe His Leu Gly Cys
  1   5   10   15
Gly Val Leu Tyr Phe Met Asn Phe Ser Leu Phe Leu Phe Phe Leu Ile
             20   25   30
Ala Ile Gln Gly Ile Cys Leu Tyr Val Gly Arg Arg Gly Ser Lys Lys
             35   40   45
Val Glu Asp Arg Glu Ser Tyr Phe Leu Ala Gly Arg Ser Leu Lys Ile
     50   55   60
Phe Pro Leu Met Met Thr Phe Ile Ala Thr Gln Ile Gly Gly Gly Val
65   70   75   80
Leu Leu Gly Ala Ala Glu Glu Ala Phe Cys Tyr Gly Tyr Gly Gly Ile
             85   90   95
Leu Tyr Pro Leu Gly Val Ala Leu Gly Leu Ile Phe Leu Gly Met Gly
             100   105   110
Pro Gly Lys Arg Leu Ala Glu Gly Ser Leu Thr Thr Val Val Ser Ile
     115   120   125
Phe Glu Val Phe Tyr Gly Ser Lys Lys Leu Arg Lys Ile Ala Phe Leu
     130   135   140
Leu Ser Ala Gly Ser Leu Phe Phe Ile Leu Val Ala Gln Val Ile Ala
145   150   155   160
Leu Asp Arg Leu Phe Ser Ser Phe Pro Phe Gly Lys Tyr Val Thr Val
                 165   170   175
Ala Phe Trp Ile Val Leu Ala Ser Tyr Thr Ser Thr Gly Gly Phe Arg
                 180   185   190
Gly Val Val Arg Thr Asp Val Ile Gln Ala Gly Phe Leu Leu Ile Ala
         195   200   205
Val Leu Val Cys Gly Val Ser Val Trp Leu Ser Val Pro Lys Ser Leu
     210   215   220
Ser Val Leu Asp Pro Phe Gln Ser Leu Pro Cys Ala Lys Leu Ser Asn
225   230   235   240
Trp Ile Phe Met Pro Met Leu Phe Met Leu Val Glu Gln Asp Met Val
                 245   250   255
Gln Arg Cys Val Ala Ala Ser Ser Pro Lys Arg Leu Gln Trp Ala Ala
             260   265   270

```
Val Gly Ala Gly Leu Val Leu Leu Phe Asn Phe Ile Pro Leu Phe
        275             280             285
Leu Gly Ser Leu Gly Ala Lys Ala Gly Leu Lys Ala Gly Cys Pro Leu
        290             295             300
Ile Asp Thr Ile Ala Tyr Phe Cys Asn Pro Ser Leu Ala Ala Val Met
305             310             315             320
Ala Ala Ala Ile Gly Val Ala Ile Leu Ser Thr Ala Asp Ser Leu Met
                325             330             335
Asn Ala Val Ser Gln Leu Ile Ala Glu Glu Tyr Pro Thr Leu Lys Ala
                340             345             350
Pro Tyr Tyr Arg Tyr Leu Val Leu Gly Leu Ala Val Ala Ala Pro Leu
                355             360             365
Val Ala Ile Gly Phe Thr Asn Ile Val Asp Val Leu Ile Leu Ser Tyr
        370             375             380
Ser Leu Ser Val Cys Cys Leu Ser Val Pro Val Gly Phe Tyr Leu Leu
385             390             395             400
Ala Pro Lys Gly Arg Arg Val Ser Gly Ala Ala Ala Trp Ala Gly Val
                405             410             415
Leu Val Gly Ala Leu Gly Tyr Gly Trp Val Gln Ile Val Ser Leu Gly
        420             425             430
Met Phe Gly Glu Leu Leu Ala Trp Val Gly Ser Leu Val Ala Phe Ser
        435             440             445
Phe Val Gly Phe Ile Glu Ile Thr Trp Lys Asn Lys Val Lys Thr Gln
450             455             460
Thr
465
```

```
<210> 489
<211> 574
<212> PRT
<213> Chlamydia pneumoniae


<400> 489
Arg Arg Thr Gly Gly Ile Ser Leu Thr Tyr Ser Ser Phe Arg Trp Ala
1               5               10              15
Ser Phe Arg Cys Tyr Ser Leu Ile Phe Phe Cys Phe Cys Gly Ser Leu
                20              25              30
Phe Gly Ser Glu Ser Leu Arg Tyr Gln Leu Leu Ile Gln Asp Phe Ala
        35              40              45
Lys Val Ser Glu Glu Gly Ile Gly Leu Leu Glu Ser Lys Glu Tyr Ser
    50              55              60
Leu Leu Gln Ala Lys Leu Val Leu Arg Ala Leu Ala Gln Asn Ser Ser
65              70              75              80
Phe Asp Asp Trp Phe Arg Ser Phe Lys Lys Cys Gln Ile Ser Tyr Pro
                85              90              95
Glu Leu Ala His Asp Arg Asp Val Leu Glu Glu Phe Gly Ile Gln Val
                100             105             110
Leu Arg Glu Gly Ile Glu Asn Pro Ser Val Thr Val Arg Ala Val Ser
        115             120             125
Val Leu Ala Ile Gly Leu Ala Arg Asp Phe Arg Leu Val Pro Leu Leu
    130             135             140
Leu Gln Ser Cys Asn Asp Asp Ser Ala Ile Val Arg Ser Leu Ala Leu
145             150             155             160
Gln Val Ala Val Asn Tyr Gly Ser Glu Ser Leu Lys Lys Ala Ile Val
                165             170             175
Glu Leu Ala Arg Asn Asp Asp Ser Ile His Val Arg Ile Thr Ala Tyr
                180             185             190
Gln Val Val Ala Leu Leu Gln Ile Glu Glu Leu Leu Pro Phe Leu Arg
        195             200             205
Glu Arg Ala Glu Asn Lys Leu Val Asp Ser Val Glu Arg Arg Glu Ala
    210             215             220
```

762

Trp Lys Ala Cys Leu Glu Leu Ser Ser Gln Phe Leu Glu Thr Gly Val
225   230   235   240
Ala Lys Asp Asp Ile Asp Gln Ala Leu Phe Thr Cys Glu Val Leu Arg
            245   250   255
Asn Gly Met Leu Pro Glu Thr Thr Glu Ile Phe Thr Glu Leu Leu Ser
            260   265   270
Val Glu His Pro Glu Val Gln Glu Ser Leu Leu Leu Ser Ala Leu Ala
            275   280   285
Trp Ser His Gln Leu Gln Asn His Lys Glu Phe Leu Ser Lys Val Arg
        290   295   300
His Val Met Cys Thr Ser Pro Phe Ala Lys Val Arg Phe Gln Ala Ala
305   310   315   320
Ala Leu Leu His Leu His Gly Asp Pro Leu Gly Arg Asp Ser Leu Val
            325   330   335
Glu Gly Leu Arg Ser Pro Gln Pro Leu Val Cys Glu Ala Ala Ser Ala
            340   345   350
Ala Leu Cys Ser Leu Gly Ile His Gly Val Pro Leu Ala Lys Glu His
            355   360   365
Leu Glu Ser Leu Ser Ser Arg Lys Ala Ala Ala Asn Leu Ser Ile Leu
    370   375   380
Leu Leu Val Ser Arg Glu Asp Ile Glu Arg Ala Gly Asp Val Ile Ala
385   390   395   400
Arg Tyr Leu Ser Asn Pro Glu Met Cys Trp Ala Ile Glu Tyr Phe Leu
            405   410   415
Trp Asp Ala Gln Trp Asn Leu Arg Gly Asp Thr Phe Pro Leu Tyr Ser
            420   425   430
Asp Met Ile Lys Arg Glu Ile Gly Arg Lys Leu Ile Arg Leu Leu Ala
        435   440   445
Val Ala Arg Tyr Ser Gln Ala Lys Ala Val Thr Ala Thr Phe Leu Ser
    450   455   460
Gly Gln Gln Ala Gln Gly Trp Ser Phe Phe Ser Gly Met Phe Trp Glu
465   470   475   480
Glu Gly Asp Val Lys Thr Ser Glu Asp Leu Val Thr Asp Ala Cys Phe
            485   490   495
Ala Ala Lys Leu Glu Gly Ala Leu Ala Ser Leu Cys Gln Lys Lys Asp
            500   505   510
Gln Ala Ser Leu Gln Arg Val Ser Gln Leu Tyr Asn Asp Ser Arg Trp
        515   520   525
Gln Asp Lys Leu Ala Ile Leu Glu Ser Val Ala Phe Ser Glu Asn Leu
    530   535   540
Asp Ala Val Pro Phe Leu Leu Asp Cys Cys His His Glu Ala Pro Ser
545   550   555   560
Leu Arg Ser Ala Ala Ala Gly Ala Leu Phe Ser Ile Phe Lys
                565   570

<210> 490
<211> 127
<212> PRT
<213> Chlamydia pneumoniae

<400> 490
Arg Lys Leu Pro Thr Cys Phe Ala Val Asn Val Thr Arg Ser Arg Asp
 1   5   10   15
His Met Thr Val Phe Lys Gln Ile Ile Asp Gly Leu Ile Asp Cys Glu
            20   25   30
Lys Val Phe Glu Asn Glu Asn Phe Ile Ala Ile Lys Asp Arg Phe Pro
        35   40   45
Gln Ala Pro Val His Leu Leu Ile Ile Pro Lys Lys Pro Ile Pro Arg
    50   55   60
Phe Gln Asp Ile Pro Gly Asp Glu Met Ile Leu Met Ala Glu Ala Gly
65   70   75   80

763

Lys Ile Val Gln Glu Leu Ala Ala Glu Phe Gly Ile Ala Asp Gly Tyr
              85   90   95
Arg Val Val Ile Asn Asn Gly Ala Glu Gly Gly Gln Ala Val Phe His
              100   105   110
Leu His Ile His Leu Leu Gly Gly Arg Pro Leu Gly Ala Ile Ala
              115   120   125

        <210> 491
        <211> 314
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 491
Arg Ile Val Phe Ala Ile Glu Asn Tyr Phe Ser Leu Val Thr Met Glu
1   5   10   15
Asp Trp Leu Arg Arg Ile Val Gly Met Gln Ile Pro Arg Ser Ile Gly
              20   25   30
Thr His Asp Gly Ser Phe His Ala Asp Glu Val Thr Ala Cys Ala Leu
              35   40   45
Leu Ile Ile Phe Asp Leu Val Asp Glu Asn Lys Ile Ile Arg Ser Arg
              50   55   60
Asp Pro Val Val Leu Ser Lys Cys Glu Tyr Val Cys Asp Val Gly Gly
65   70   75   80
Val Tyr Ser Ile Glu Asn Lys Arg Phe Asp His His Gln Val Ser Tyr
              85   90   95
Asp Gly Ser Trp Ser Ser Ala Gly Met Ile Leu His Tyr Leu Lys Glu
              100   105   110
Phe Gly Tyr Met Asp Cys Glu Glu Tyr His Phe Leu Asn Asn Thr Leu
              115   120   125
Val His Gly Val Asp Glu Gln Asp Asn Gly Arg Phe Phe Ser Lys Glu
              130   135   140
Gly Phe Cys Ser Phe Ser Asp Ile Ile Lys Ile Tyr Asn Pro Arg Glu
145   150   155   160
Glu Glu Glu Thr Asn Ser Asp Ala Asp Phe Ser Cys Ala Leu His Phe
              165   170   175
Thr Ile Asp Phe Leu Cys Arg Leu Arg Lys Lys Phe Gln Tyr Asp Arg
              180   185   190
Val Cys Arg Gly Ile Val Arg Glu Ala Met Glu Thr Glu Asp Met Cys
              195   200   205
Leu Tyr Phe Asp Arg Pro Leu Ala Trp Gln Glu Asn Phe Phe Phe Leu
              210   215   220
Gly Gly Glu Lys His Pro Ala Ala Phe Val Cys Phe Pro Ser Cys Asp
225   230   235   240
Gln Trp Ile Leu Arg Gly Ile Pro Pro Asn Leu Asp Arg Arg Met Asp
              245   250   255
Val Arg Val Pro Phe Pro Glu Asn Trp Ala Gly Leu Leu Gly Lys Glu
              260   265   270
Leu Ser Lys Val Ser Gly Ile Pro Gly Ala Val Phe Cys His Lys Gly
              275   280   285
Leu Phe Leu Ser Val Trp Thr Asn Arg Glu Ser Cys Gln Arg Ala Leu
              290   295   300
Arg Leu Thr Leu Gln Asp Arg Gly Ile Ile
305   310

        <210> 492
        <211> 686
        <212> PRT
        <213> Chlamydia pneumoniae

764

<400> 492

```
Ile Met Tyr Asn Leu Leu His Ala His His Asp Ala Ala Ser Pro Asp
1               5                   10                  15
Gly Arg Leu Val Ser His Leu Lys Lys Leu Ser Pro His Ile Tyr Glu
            20                  25                  30
Gly Glu Val Leu Ile Glu Asn Ile Pro Ala Tyr Phe Leu Gly Phe His
            35                  40                  45
Leu Pro Gln Gln Cys Ile Gln Val Asn Leu Lys Ser Ser Leu Ala Gln
    50                  55                  60
Leu Gly Val Glu Ala Val Leu Asn His Leu Glu Leu Asn Lys Ala Arg
65                  70                  75                  80
Lys Glu Ala Arg Leu His Val Leu Phe Met Ser Gln Asp Pro Ile Ala
            85                  90                  95
Thr Ala Met Leu Glu Leu Leu Glu Pro Gly Ser Phe Val Cys Lys Leu
            100                 105                 110
Phe Ala Ala Asp Asp Arg Arg Leu Val Arg Ser Pro Cys Tyr Leu Asn
            115                 120                 125
Arg Met Phe Thr His Thr Asp Arg Thr Gly Ser Pro Leu Leu Arg Phe
            130                 135                 140
Gly Lys Lys Leu Glu His Phe Ile Thr Leu Glu Ile Ile Asn Asp Arg
145                 150                 155                 160
Leu Val Val Phe Leu Pro Ile Leu Pro Gly Thr Ile Cys Tyr Glu Glu
            165                 170                 175
Thr Ile Tyr Gly Phe Leu Pro Leu Met Ser Lys Ser Leu Thr Arg Pro
            180                 185                 190
His Leu Lys Ile Arg Lys Phe Leu Pro Leu Tyr Gln Met Val Thr Asp
            195                 200                 205
Arg Pro Pro Val Pro Glu Asp His Lys Ile Leu Leu Ile Lys Thr Glu
    210                 215                 220
Pro Leu His Ile Arg Thr Val Phe Ala Arg Val Val Gln Asp Leu Leu
225                 230                 235                 240
Pro Gln Gly Leu Arg His Thr Ala Ala Asp Ile Leu Glu Pro Thr Thr
            245                 250                 255
Gln Glu Ser Gly Asp Ile Tyr Glu Phe Tyr Gly Ser Thr Ser Glu Pro
            260                 265                 270
Ile Glu Arg Ile Pro Leu Glu Phe Phe Thr Leu Glu Pro Tyr Lys Glu
            275                 280                 285
His Ser Phe Phe Phe Tyr Arg Asp Met Leu Gln Glu Thr Leu Glu Ser
            290                 295                 300
Pro Gln Glu Val Phe Arg Val Phe Glu Ser Ile Pro Glu Gly Glu Asp
305                 310                 315                 320
Gln Ala Ala Met Phe Ile Ser Lys Gly Ser Glu Leu Leu Glu Leu Ser
            325                 330                 335
Gln Asp Ser Trp Ile Ile Lys Pro Arg Ile Ser Pro Ser Asp Glu Arg
            340                 345                 350
His Ala Arg Glu Ile Gln Lys His Ile Glu Asp Gln Pro Cys Phe Pro
            355                 360                 365
Phe Leu Lys Ala Met Glu Thr Asp His Ile Thr Ser Gln Gly Val Leu
    370                 375                 380
Phe Ser Arg Tyr Phe Pro Ser Ala Ser Leu Lys Gly Met Phe Leu Ser
385                 390                 395                 400
Asn Tyr Ser Arg Tyr Tyr Leu Gln His Ile Tyr Phe Gln Ile Pro Ser
            405                 410                 415
Pro Thr Ser Gly Glu Phe Phe Ser Asn Arg Asp Arg Ser Phe Leu Leu
            420                 425                 430
Asp Leu Tyr Phe Ala Gly Ile Ser Val Phe Trp Ala Asp Leu Glu Ser
    435                 440                 445
Lys Arg Leu Leu Gln Tyr Ile Lys Arg Arg Asn Lys Asp Val Gly Met
    450                 455                 460
Phe Val Pro Lys His Gln Ala Glu Gln Phe Ala Gln Ser Tyr Phe Ile
465                 470                 475                 480
```

765

```
Gly Ile His Gly Ser Cys Leu Ile Ala Gly Asp Tyr Asp Glu Phe Leu
            485                 490                 495
Arg Glu Leu Leu Thr Gly Met His Thr Leu Ser Gln Gln Phe Thr Ile
            500                 505                 510
Pro Glu Phe Pro Pro Gln Thr Pro Leu Ala Ile Leu Thr Gly Gly Gly
            515                 520                 525
Ser Gly Ala Met Glu Leu Ala Asn Arg Val Ala Thr Glu Leu Ser Ile
        530                 535                 540
Leu Ser Cys Gly Asn Leu Ile Ser Leu Asp Thr Thr Asn Ala Tyr Val
545                 550                 555                 560
Glu Ala Lys Met Ser Tyr Ala Ile Pro Asp Leu Leu Glu Arg Gln Ala
                565                 570                 575
Asp Phe His Val Asp Leu Ala Val Phe Val Ile Gly Gly Met Gly Thr
                580                 585                 590
Asp Phe Glu Leu Leu Leu Glu Leu Ile Ser Leu Lys Thr Gly Lys Lys
            595                 600                 605
Ala Leu Val Pro Val Phe Leu Ile Gly Pro Val Asp Tyr Trp Lys Ser
    610                 615                 620
Lys Ile Thr Ala Leu Tyr Asn Ser Asn His Ala Val Gly Thr Ile Arg
625                 630                 635                 640
Gly Ser Glu Trp Val His Asn Cys Leu Phe Cys Leu Ser Ser Ala Lys
                645                 650                 655
Ala Gly Ile Ala Ile Phe Arg Arg Tyr Leu Asn His Thr Leu Pro Ile
                660                 665                 670
Gly Pro Glu His Pro Val Pro Glu Asp Gly Phe Val Ile Val
            675                 680                 685


        <210> 493
        <211> 420
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 493
Ile Leu Ser Ser Leu Tyr Thr Val Phe Thr Met Lys Thr Ala Phe His
1               5                   10                  15
Ser Cys Tyr Ser Trp Phe Cys Trp Leu Phe Ser Phe Leu Val Leu Phe
                20                  25                  30
Val Gly Gly Ile Ala Gly Gly Glu Pro Leu Cys Pro Asp Cys Lys Tyr
            35                  40                  45
Glu Thr Lys Ser Val Leu Arg Ser Asp Gln Leu Pro Asp His Leu Trp
    50                  55                  60
Asn Tyr Glu Asn Asp Cys Tyr Leu Thr Gly Tyr Val Gln Ser Leu Leu
65                  70                  75                  80
Asp Met His Phe Leu Asp Ser Arg Thr Gln Val Val Ile Glu Lys Asn
                85                  90                  95
Arg Ala Tyr Leu Phe Ser Leu Pro Val Asp Ser Ser Leu Ser Glu Ala
            100                 105                 110
Ile Thr Asn Phe Val Arg Asp Leu Pro Phe Ile Cys Ala Val Glu Ile
            115                 120                 125
Cys Glu Arg Pro Tyr Gly Glu Cys Ile Thr Arg Ser Ser Ala Glu Arg
    130                 135                 140
Pro Leu Leu Pro Lys Glu Lys Thr Leu Gly Met Pro Ile Phe Cys Gly
145                 150                 155                 160
Lys Glu Gly Val Trp Leu Pro Gln Asn Thr Ile Leu Phe Ser Pro Leu
                165                 170                 175
Ile Ala Asp Pro Arg Gln Val Thr Asn Ser Ala Gly Ile Arg Phe Asn
                180                 185                 190
Glu Lys Val Val Gly Asn Arg Val Gly Ala Thr Ile Phe Gly Gly Asp
            195                 200                 205
Phe Ile Leu Leu Arg Leu Phe Asp Val Ser Arg Phe His Val Asp Cys
    210                 215                 220
```

766

Asp Phe Gly Ile Gln Gly Gly Val Phe Ser Val Phe Asp Leu Asp His
225   230   235   240
Pro Glu Ser Cys Met Val Asn Ser Asp Phe Phe Val Ala Gly Leu Trp
            245   250   255
Ser Gly Ala Ile Asp Lys Trp Ser Phe Arg Phe Arg Leu Trp His Leu
            260   265   270
Ser Ser His Leu Gly Asp Glu Phe Ile Leu Thr His Pro Asn Phe Pro
            275   280   285
Arg Phe Asn Leu Ser Asp Glu Gly Val Asp Leu Phe Ile Ser Phe Arg
            290   295   300
Tyr Thr Pro Gln Ile Arg Leu Tyr Gly Gly Cys Gly Tyr Ile Val Ser
305   310   315   320
Arg Asp Leu Thr Phe Pro Glu Arg Pro Phe Tyr Cys Glu Trp Gly Ala
            325   330   335
Glu Leu Arg Pro Phe Gly Leu Arg Glu Gly Asn Leu His Ala Gln Pro
            340   345   350
Ile Phe Ala Met His Phe Arg Cys Trp Glu Glu Gln Lys Phe Gly Leu
            355   360   365
Asp Gln Ser Tyr Ile Leu Gly Met Glu Trp Ala Lys Phe Gln Glu Ile
            370   375   380
Gly Arg Lys Ile Arg Ala Val Leu Glu Tyr His Gln Gly Phe Ser Lys
385   390   395   400
Glu Gly Gln Phe Ile Arg Glu Pro Cys Asn Tyr Tyr Gly Phe Arg Leu
            405   410   415
Thr Tyr Gly Phe
            420

        <210> 494
        <211> 54
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 494
Leu Phe Ser Leu Ile Phe Pro Ile Cys Glu Glu Arg Asn Ser Gln Gln
1   5   10   15
Thr Tyr Lys His Leu His Val Glu Ser Ala Cys Phe Leu Leu Glu Ser
            20   25   30
Pro Leu Lys Ile His Trp Ser Ser Pro Tyr Gly Phe Pro Pro Phe Tyr
        35   40   45
Arg Arg Asp Leu Lys Leu
    50

        <210> 495
        <211> 96
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 495
Ser Lys Thr Glu Gly Ser His Ser Lys Thr Ser Lys Gly Phe Val Gly
1   5   10   15
Arg Phe Val Gln Trp Ile Arg Thr Phe Thr Gly Arg Gly Ser Lys Lys
            20   25   30
Arg Ser Pro Ser Ser Phe Ser Pro Thr His Pro Tyr Ile Arg Leu Arg
        35   40   45
Thr Tyr Thr Arg Ser Pro Lys Gln Ser Gly Val Glu Arg Lys Gln Glu
    50   55   60
Asp Ala Glu Thr Ser Phe Ile Glu Thr Pro Lys Gly Ile Leu Lys Lys
65   70   75   80
Pro Gly Asn Lys Asp Pro Lys Gly Lys His Val His Trp Lys Asp Ser
            85   90   95

767

<210> 496
<211> 75
<212> PRT
<213> Chlamydia pneumoniae

<400> 496
```
Val Ile Met Ile Arg Val Asn Pro Tyr Gly Ser Tyr Arg Gly Arg Asn
1               5                   10                  15
Pro Ser Pro Glu Asp Gly Lys Lys Asp Val Pro Leu Ser Gly Asn Ser
            20                  25                  30
Arg Leu His Arg Arg Gly Gly Ile Arg Arg Lys His Lys Ser Ala Ser
        35                  40                  45
Val Gly Val Thr Ser Gly Ser Lys Thr Gly Lys Ala Ser Leu Glu Lys
    50                  55                  60
Lys Val Lys Gly Ile Ser Glu Ala His Phe Lys
65                  70                  75
```

<211> 429
<212> PRT
<213> Chlamydia pneumoniae

<400> 497
```
Arg Arg Leu Lys Lys Asn Gln Lys Met Ala Ile Gln Lys Ala Gly Ala
1               5                   10                  15
Phe Leu Arg Cys Leu Pro Ser Glu Ser Arg Pro Tyr Leu Glu His Ala
            20                  25                  30
Met Arg Arg Asn Pro His Phe Ser Leu Leu Lys Pro Gln Tyr Leu Phe
        35                  40                  45
Ser Glu Ile Ser Lys Lys Leu Ala Gln Phe Arg Lys Glu Asn Pro Glu
    50                  55                  60
Ile Ser Val Ile Asp Leu Ser Ile Gly Asp Thr Thr Gln Pro Leu Cys
65                  70                  75                  80
Arg Ser Ile Thr Gln Ala Ile Lys Glu Phe Cys Val Ser Gln Glu Lys
                85                  90                  95
Gln Glu Thr Tyr Arg Gly Tyr Gly Pro Glu Thr Gly Leu Glu Lys Leu
            100                 105                 110
Arg Thr Lys Ile Ala Ser Glu Val Tyr Glu Asn Arg Ile Ser Pro Glu
        115                 120                 125
Glu Ile Phe Ile Ser Asp Gly Ala Lys Pro Asp Ile Phe Arg Leu Phe
    130                 135                 140
Ser Phe Phe Gly Ser Glu Lys Thr Leu Gly Leu Gln Asp Pro Val Tyr
145                 150                 155                 160
Pro Ala Tyr Arg Asp Ile Ala His Ile Thr Gly Ile Arg Asp Ile Ile
            165                 170                 175
Pro Leu Ala Cys Arg Lys Glu Thr Gly Phe Ile Pro Glu Leu Pro Asn
            180                 185                 190
Gln Gln Ser Leu Asp Ile Leu Cys Leu Cys Tyr Pro Asn Asn Pro Thr
        195                 200                 205
Gly Thr Val Leu Thr Phe Gln Gln Leu Gln Ala Leu Val Asn Tyr Ala
    210                 215                 220
Asn Gln His Gly Thr Val Leu Ile Phe Asp Ala Ala Tyr Ser Ala Phe
225                 230                 235                 240
Val Ser Asp Pro Ser Leu Pro Lys Ser Ile Phe Glu Ile Pro Glu Ala
            245                 250                 255
Lys Tyr Cys Ala Ile Glu Ile Asn Ser Phe Ser Lys Ser Leu Gly Phe
            260                 265                 270
Thr Gly Met Arg Leu Ala Trp Asn Val Ile Pro Lys Glu Leu Thr Tyr
        275                 280                 285
Asp Asn Asn Glu Pro Met Ile Asn Asp Trp Lys Arg Leu Phe Ala Thr
    290                 295                 300
```

```
Thr Phe Asn Gly Ala Ser Leu Leu Met Gln Glu Ala Gly Tyr Tyr Gly
305             310             315             320
Leu Asp Leu Phe Pro Thr Pro Pro Ala Ile Ser Leu Tyr Leu Thr Asn
            325             330             335
Ala Gln Lys Leu Lys Lys Ser Leu Glu Thr Ala Gly Phe Ser Val His
            340             345             350
Gly Gly Asp His Ala Pro Tyr Leu Trp Val Glu Leu Pro Glu Gly Ile
            355             360             365
Ser Asp Glu Glu Ala Phe Asp Phe Phe Leu His Gln Tyr His Ile Ala
            370             375             380
Val Thr Pro Gly His Gly Phe Gly Ser Cys Gly Gln Gly Phe Val Arg
385             390             395             400
Phe Ser Ala Leu Thr Gln Pro Gln Asn Ile Ala Leu Ala Cys Asp Arg
            405             410             415
Leu Cys Thr Ala Ser Leu Lys Glu Thr Met Val Leu Ala
            420             425

<210> 498
<211> 354
<212> PRT
<213> Chlamydia pneumoniae


<400> 498
Pro Pro Leu Tyr Arg Phe Thr Lys Arg Asn Asp Gly Ser Cys Met Thr
1               5               10              15
Ile Leu Arg Lys Leu Ser Gln Tyr Leu Phe Phe Phe Ser Leu Phe Cys
            20              25              30
Ser Phe Ile Tyr Val Ala Thr Cys Gly Ser Gln Pro Asp Ser Val Ser
            35              40              45
Ser Pro Lys Ile Ala Ile Phe Leu Ser Phe Pro His Pro Leu Leu Glu
            50              55              60
Asp Cys Ser Lys Ser Cys Ile Glu Thr Leu Lys Asp Phe Glu Asn Leu
65              70              75              80
Pro Glu Ile Val Val Leu Asn Ala Glu Asp Ser Ile Val Lys Ala Arg
                85              90              95
Lys Ile Ala Arg Ser Leu His Thr Asp Lys Asn Val Val Ala Ile Val
            100             105             110
Thr Leu Gly Thr Ile Ala Thr Lys Val Met Ser His Ile Glu Thr Gln
            115             120             125
Lys Pro Val Ile Tyr Ala Ala Val Pro Asp Arg Glu Ser Leu Thr Leu
            130             135             140
Pro Lys Asn Thr Met Asn Ile Tyr Gly Val Asn Asp Thr Leu Asp Ile
145             150             155             160
Asn Gln Tyr Cys Phe Ala Ile Gln Ala Val Ala Thr Asn Ala Gln Ser
                165             170             175
Ile Val Tyr Leu Lys Pro Ser Glu Pro Phe Pro Ser Asp Leu Gln Lys
            180             185             190
Glu Ile Val Lys Lys Leu His Ala Ser Gly Ile Glu Val Ile Glu Ile
            195             200             205
Ser Ile Thr Ser Ser Thr Phe Lys Thr Arg Ile Arg Gln Ala Ile Asp
            210             215             220
Lys Arg Pro Ser Ala Ile Phe Ile Pro Leu Ser Pro Leu Ser His Lys
225             230             235             240
Glu Gly Thr Ala Phe Leu Gln Glu Ile Leu Lys Glu Lys Ile Pro Ile
                245             250             255
Ile Thr Asp Asp Thr Ser Leu Ile Ser Glu Gly Ala Cys Ile Ala Cys
                260             265             270
Ser Val Asp Tyr Lys Lys Ser Gly Lys Gln Ile Ala Lys Ile Val His
            275             280             285
His Leu Leu Tyr Asn Asn His Asp Val Asp Ser Leu Arg Lys Ile Ile
            290             295             300
```

769

```
Ala Gln Arg Leu Ser Pro Thr Thr Thr Phe Asn Glu Asp Ile Ile Lys
305             310             315             320
Tyr Leu Gly Ile Lys Leu His Lys Thr Glu Arg Asn Gln Phe Leu Ser
                325             330             335
Phe Lys Ser Lys Lys Leu Glu Lys Ser Glu Lys Gly Lys Asn Val Ala
            340             345             350
Val Ser


        <210> 499
        <211> 96
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 499
Ile Phe Gln Arg Val Val Leu Asp Asp Ser Trp Ile Leu Glu Val Lys
1               5               10              15
Val Thr Pro Lys Ala Lys Glu Asn Lys Ile Val Gly Phe Asp Gly Gln
            20              25              30
Ala Leu Lys Val Arg Val Thr Glu Pro Pro Glu Lys Gly Lys Ala Asn
            35              40              45
Asp Ala Val Ile Ser Leu Leu Ala Lys Ala Leu Ser Leu Pro Lys Arg
    50              55              60
Asp Val Thr Leu Ile Ala Gly Glu Thr Ser Arg Lys Lys Lys Phe Leu
65              70              75              80
Leu Pro Asn Arg Val Gln Asp Ile Ile Phe Ser Leu His Ile Asp Val
            85                  90              95


        <210> 500
        <211> 326
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 500
Tyr Cys Arg Leu Arg Arg Ala Pro Phe Met Asn Arg Arg Lys Ala Arg
1               5               10              15
Trp Val Val Ala Leu Phe Ala Met Thr Ala Leu Ile Ser Val Gly Cys
            20              25              30
Cys Pro Trp Ser Gln Ala Lys Ser Arg Cys Ser Ile Asp Lys Tyr Ile
            35              40              45
Pro Val Val Asn Arg Leu Leu Glu Val Cys Gly Leu Pro Glu Ala Glu
    50              55              60
Asn Val Glu Asp Leu Ile Glu Ser Ser Ser Ala Trp Val Leu Thr Pro
65              70              75              80
Glu Glu Arg Phe Ser Gly Glu Leu Val Ser Ile Cys Gln Val Lys Asp
            85              90              95
Glu His Ala Phe Tyr Asn Asp Leu Ser Leu Leu His Met Thr Gln Ala
            100             105             110
Val Pro Ser Tyr Ser Ala Thr Tyr Asp Cys Ala Val Val Phe Gly Gly
            115             120             125
Pro Leu Pro Ala Leu Arg Gln Arg Leu Asp Phe Leu Val Arg Glu Trp
    130             135             140
Gln Arg Gly Val Arg Phe Lys Lys Ile Val Phe Leu Cys Gly Glu Arg
145             150             155             160
Gly Arg Tyr Gln Ser Ile Glu Glu Gln Glu His Phe Phe Asp Ser Arg
            165             170             175
Tyr Asn Pro Phe Pro Thr Glu Glu Asn Trp Glu Ser Gly Asn Arg Val
            180             185             190
Thr Pro Ser Ser Glu Glu Glu Ile Ala Lys Phe Val Trp Met Gln Met
    195             200             205
```

770

```
Leu Leu Pro Arg Ala Trp Arg Asp Ser Thr Ser Gly Val Arg Val Thr
    210                 215             220
Phe Leu Leu Ala Lys Pro Glu Glu Asn Arg Val Val Ala Asn Arg Lys
225             230             235                 240
Asp Thr Leu Leu Leu Phe Arg Ser Tyr Gln Glu Ala Phe Pro Gly Arg
            245             250                 255
Val Leu Phe Val Ser Ser Gln Pro Phe Ile Gly Leu Asp Ala Cys Arg
            260             265                 270
Val Gly Gln Phe Phe Lys Gly Glu Ser Tyr Asp Leu Ala Gly Pro Gly
            275             280                 285
Phe Ala Gln Gly Val Leu Lys Tyr His Trp Ala Pro Arg Ile Cys Leu
            290             295                 300
His Thr Leu Ala Glu Trp Leu Lys Glu Thr Asn Gly Cys Leu Asn Ile
305             310                 315                 320
Ser Glu Gly Cys Phe Gly
                325
```

<400> 501

```
Leu Ser Val Tyr Leu Leu Ile Phe Tyr Phe Cys Asn Cys Ser Thr Met
1               5               10                  15
Ser Ser Val Asn Gln Ser Ser Gly Thr Pro Asn Pro Glu Glu Val Thr
            20              25              30
Ser Pro Glu Ser Thr Glu Glu Asn Lys Asn Val Val Ser Ser Asp Glu
        35                  40              45
Ala Gln Ala Thr His Ala Val Ala Leu Pro Ile Val Thr Gln Leu Ser
    50              55              60
Leu Pro Glu Gly Val Gly Thr Ser Ser Glu Glu Thr Ala Ser Asn Pro
65              70              75                  80
Arg Val Asp Glu Ile Val Ala Glu Val Ser Ser Ser Arg Ala Val Ala
            85              90                  95
Asp Gln Ile Ser Ser Leu Val Glu Arg Val Gly Glu Leu Leu Asp Asp
            100             105             110
Leu Lys Gly Ala Gln Ser Leu Phe Thr Ser Phe Gln Ser Glu Leu Lys
        115             120             125
Asn Cys Leu Pro Ala Trp Lys Ser Ser Thr Arg Arg Leu Glu Thr Arg
    130             135             140
Gly Ala Gly Asp Asn Ala Asp Ile Ala Arg Leu Glu Leu Phe Arg Ser
145             150             155             160
Asp Tyr Glu Ala Val Leu Gly His Ala Asn Gln Phe His Gly Lys Ala
            165             170             175
His Leu Ile Leu Ser Lys Leu Thr Asp Val His His Lys Leu Gln Gly
            180             185             190
Leu Ser Arg Glu Asp Leu Ser Leu Ala Phe Asp Asn Asn Asp Arg Val
        195             200             205
Leu Glu His Leu Gly Ser Leu Gly Leu Asp Val Asp Ala Glu Gly Asn
    210             215             220
Trp Ser Leu Ser Cys Glu Arg Gly Ile Pro Arg Leu Val Leu Thr Ala
225             230             235             240
Asp Ser Met Leu Val Gln Ile Lys Lys Val Asn Leu Pro Thr Val Glu
            245             250             255
Glu Leu Arg Thr Leu Gln Gly Thr Thr Glu Ser Ser Ser Asp Pro Arg
        260             265             270
Val Glu Glu Ser Leu Ser Cys Cys Glu Arg Leu Leu Asn Glu Leu Arg
        275             280             285
Arg Leu Trp Ala Asn Phe Val Gly Phe Ile Ser Ser Cys Tyr Asp Asn
    290             295             300
```

771

```
Ile Val Phe Val Leu Met Trp Ile Val Arg Arg Ile Asn Leu Leu Pro
305             310             315             320
Gly Leu Gly Cys Leu Pro Phe His Asn Pro Asp Ala Ser Gln Glu Asp
            325             330             335
Gln Arg Ser Ser Ser Gly Glu Arg Ser Thr Arg Arg Glu Arg Leu Ser
            340             345             350
Arg Arg Ser Asp Leu Ser Glu Glu Glu Met Ile Val Arg Ala Glu Gly
            355             360             365
Glu Ser Ile His Pro Glu Ser Pro His Gly Asp Gly Arg Asn Gln Pro
    370             375             380
Ser Arg Gly Asp Lys Gln Asp Ser Asp Ser Glu Glu Glu Thr Glu Leu
385             390             395             400
```

<210> 502
<211> 572
<212> PRT
<213> Chlamydia pneumoniae

<400> 502

```
Gln Pro His Ser Met Lys Thr Ser Gln Leu Phe Tyr Lys Thr Ser Lys
 1           5               10              15
Asn Ala Asn Lys Ser Ala Ala Val Leu Ser Asn Glu Leu Leu Glu Lys
            20              25              30
Ala Gly Tyr Leu Phe Lys Val Ser Lys Gly Val Tyr Thr Tyr Thr Pro
            35              40              45
Leu Leu Trp Arg Val Val Ser Lys Met Met Asn Ile Ile Arg Glu Glu
    50              55              60
Leu Asn Ala Ile Gly Gly Gln Glu Leu Leu Leu Pro Leu Leu His Asn
65              70              75              80
Ala Glu Leu Trp Gln His Thr Gly Arg Trp Glu Ala Phe Thr Ser Glu
            85              90              95
Gly Leu Leu Tyr Thr Leu Lys Asp Arg Glu Gly Lys Ser His Cys Leu
            100             105             110
Ala Pro Thr His Glu Glu Val Ile Cys Ser Phe Val Ala Gln Trp Leu
            115             120             125
Ser Ser Lys Arg Gln Leu Pro Leu His Leu Tyr Gln Ile Ala Thr Lys
    130             135             140
Phe Arg Asp Glu Ile Arg Pro Arg Phe Gly Leu Ile Arg Ser Arg Glu
145             150             155             160
Leu Leu Met Glu Asp Ser Tyr Thr Phe Ser Asp Ser Pro Glu Gln Met
            165             170             175
Asn Glu Gln Tyr Glu Lys Leu Arg Ser Ala Tyr Ser Lys Ile Phe Asp
            180             185             190
Arg Leu Gly Leu Ala Tyr Val Ile Val Thr Ala Asp Gly Gly Lys Ile
            195             200             205
Gly Lys Gly Lys Ser Glu Glu Phe Gln Val Leu Cys Ser Leu Gly Glu
    210             215             220
Asp Thr Ile Cys Val Ser Gly Ser Tyr Gly Ala Asn Ile Glu Ala Ala
225             230             235             240
Val Ser Ile Pro Pro Gln His Ala Tyr Asp Arg Glu Phe Leu Pro Val
            245             250             255
Glu Glu Val Ala Thr Pro Gly Ile Thr Thr Ile Glu Ala Leu Ala Asn
            260             265             270
Phe Phe Ser Ile Pro Leu His Lys Ile Leu Lys Thr Leu Val Val Lys
            275             280             285
Leu Ser Tyr Ser Asn Glu Glu Lys Phe Ile Ala Ile Gly Met Arg Gly
    290             295             300
Asp Arg Gln Val Asn Leu Val Lys Val Ala Ser Lys Leu Asn Ala Asp
305             310             315             320
Asp Ile Ala Leu Ala Ser Asp Glu Glu Ile Glu Arg Val Leu Gly Thr
            325             330             335
```

772

```
Glu Lys Gly Phe Ile Gly Pro Leu Asn Cys Pro Ile Asp Phe Phe Ala
            340                 345                 350
Asp Glu Thr Thr Ser Pro Met Thr Asn Phe Val Cys Ala Gly Asn Ala
            355                 360                 365
Lys Asp Lys His Tyr Val Asn Val Asn Trp Asp Arg Asp Leu Leu Pro
        370                 375                 380
Pro Gln Tyr Gly Asp Phe Leu Leu Ala Glu Glu Gly Asp Thr Cys Pro
385                 390                 395                 400
Glu Asn Pro Gly His Pro Tyr Arg Ile Tyr Gln Gly Ile Glu Val Ala
                405                 410                 415
His Ile Phe Asn Leu Gly Thr Arg Tyr Thr Asp Ser Phe Glu Val Asn
            420                 425                 430
Phe Gln Asp Glu His Gly Gln Thr Gln Gln Cys Trp Met Gly Thr Tyr
        435                 440                 445
Gly Ile Gly Val Gly Arg Thr Leu Ala Ala Cys Val Glu Gln Leu Ala
        450                 455                 460
Asp Asp Arg Gly Ile Val Trp Pro Lys Ala Leu Ala Pro Phe Ser Ile
465                 470                 475                 480
Thr Ile Ala Phe Asn Gly Gly Asp Thr Val Ser Gln Glu Leu Ala Glu
            485                 490                 495
Thr Ile Tyr His Glu Leu Gln Ser Gln Gly Tyr Glu Pro Leu Leu Asp
        500                 505                 510
Asp Arg Asp Glu Arg Leu Gly Phe Lys Leu Lys Asp Ser Asp Leu Ile
        515                 520                 525
Gly Ile Pro Tyr Lys Leu Ile Leu Gly Lys Ser Tyr Gln Ser Ser Gly
    530                 535                 540
Ile Phe Glu Ile Glu Ser Arg Ser Gly Glu Lys Tyr Thr Val Ser Pro
545                 550                 555                 560
Glu Ala Phe Pro Thr Trp Cys Gln Asn His Leu Ala
            565                 570
```

```
        <400> 503
Ile Leu Leu Thr Phe Ser Gly Ser Phe Pro Ile Met Leu Ser Val Thr
1                 5                  10                  15
Ile Val Leu Val Gly Leu Glu Met Ala Arg Ser Lys Val Ser Lys Arg
            20                  25                  30
Asp Ser Lys Ile Leu Asp Ile Leu Phe Ala Thr Thr Glu Leu Tyr Leu
        35                  40                  45
Lys Thr Gly Gln Pro Val Gly Ser Lys Thr Leu Lys Glu Ser Phe Cys
    50                  55                  60
Ser Asp Leu Ser Thr Ala Thr Ile Arg Asn Tyr Phe Ala Glu Leu Glu
65                  70                  75                  80
Ala Glu Gly Phe Leu Lys Lys Asn His Thr Ser Gly Gly Arg Ile Pro
                85                  90                  95
Thr Asp Leu Ala Leu Arg His Tyr Val Asp His Gln Glu Glu Cys Pro
            100                 105                 110
Glu Ala Glu Ile Ser Ala Pro Ile Phe Asp Lys Ile Ser Gln Leu Pro
        115                 120                 125
Ser Glu Ser Arg Asn Ile Ile Lys Asp Leu Gln Lys Ala Thr Glu Leu
    130                 135                 140
Leu Gly Glu Ile Leu Asp Leu Pro Thr Phe Phe Ser Ser Pro Arg Phe
145                 150                 155                 160
Glu Asn Asp Ser Val Thr Asn Ile Gln Ile Thr Gln Val Asp Lys Gln
                165                 170                 175
Arg Ala Val Thr Ile Leu Ser Thr Glu Phe Gly Gln Ile Phe Thr Asp
            180                 185                 190
```

Thr Leu Trp Leu Pro Glu Ala Cys Asp Thr Leu Ser Ile Lys Arg Ile
        195   200   205
Glu Lys Phe Leu Gln Asn Tyr Ile Arg Lys Leu Pro Thr Asn Glu Glu
        210   215   220
Leu Ser Lys Lys Glu Glu His Leu Ser Met Ser Leu Tyr Asn Glu Val
225   230   235   240
Val Val Arg Tyr Leu Thr Arg Tyr Cys Asn Phe Ser Glu Glu Asp Leu
                245   250   255
Tyr Gln Thr Gly Met Ser Lys Leu Leu Lys Tyr Glu Ala Phe Lys Asp
            260   265   270
Pro Glu Val Leu Ala Leu Gly Leu Ser Leu Phe Glu Asn Arg Arg Gln
            275   280   285
Met Cys Glu Leu Leu Asn Ile Gly Met His Lys Gly Arg Ala Thr Ala
        290   295   300
Phe Ile Gly Lys Glu Leu Ser Asp Ile Leu Gly Thr Ser Asn Pro Gly
305   310   315   320
Cys Ser Val Ile Thr Ile Pro Tyr Tyr Met Asn Arg Ser Pro Leu Gly
            325   330   335
Ala Leu Gly Ile Leu Gly Pro Ile Asn Leu Pro Tyr Lys Glu Ala Leu
            340   345   350
Pro Leu Leu Lys Leu Phe Ala Asn Lys Ile Asn Glu Thr Leu Thr Gln
            355   360   365
Ser Phe Tyr Lys Phe Lys Leu Ser Phe Arg Arg Pro Leu Thr Ser Asn
        370   375   380
Cys Lys Leu Ser Asn Glu Pro Ile Leu Arg Thr Glu Tyr Ser Ser Ile
385   390   395   400
Lys Leu Leu Pro Ser Lys Glu Thr Leu
                405

<210> 504
<211> 187
<212> PRT
<213> Chlamydia pneumoniae

<400> 504
Gly Asp Val Met Thr Asp Thr Pro Pro Glu Asn Glu Glu Gln His Glu
1   5   10   15
Ser Asn Val Gln Asn Glu Asn Glu Val Glu His Leu Gln Gln Glu Ile
            20   25   30
Val Thr Leu Lys Thr Glu Leu Lys Glu Lys Asn Asp Lys Tyr Leu Met
        35   40   45
Ala Leu Ala Glu Ser Glu Asn Ser Arg Lys Arg Leu Gln Lys Glu Arg
    50   55   60
Gln Glu Leu Met Gln Tyr Ala Leu Glu Asn Thr Leu Ile Asp Phe Leu
65   70   75   80
Asn Pro Ile Glu Ser Met Glu Lys Ala Leu Gly Phe Ala Thr Gln Met
                85   90   95
Ser Asp Asp Val Lys Asn Trp Ala Leu Gly Phe Asn Met Ile Leu Asn
            100   105   110
Gln Phe Lys Gln Ile Phe Glu Glu Lys Gly Ile Ile Glu Tyr Ser Ser
        115   120   125
Ile Gly Gln Lys Phe Asn Pro Phe Leu His Glu Ala Val Gln Thr Glu
        130   135   140
Glu Thr Ser Glu Val Pro Glu Gly Thr Ile Leu Glu Glu Phe Ala Lys
145   150   155   160
Gly Tyr Lys Ile Gly Glu Arg Pro Ile Arg Val Ala Lys Val Lys Val
                165   170   175
Ala Lys Ala Pro Thr Pro Lys Glu Asn Lys Glu
            180   185

774

<210> 505
<211> 663
<212> PRT
<213> Chlamydia pneumoniae

<400> 505

```
Val Pro Asn Met Ser Glu His Lys Lys Ser Ser Lys Ile Ile Gly Ile
1               5                   10                  15
Asp Leu Gly Thr Thr Asn Ser Cys Val Ser Val Met Glu Gly Gly Gln
            20                  25                  30
Ala Lys Val Ile Thr Ser Ser Glu Gly Thr Arg Thr Thr Pro Ser Ile
            35                  40                  45
Val Ala Phe Lys Gly Asn Glu Lys Leu Val Gly Ile Pro Ala Lys Arg
    50                  55                  60
Gln Ala Val Thr Asn Pro Glu Lys Thr Leu Gly Ser Thr Lys Arg Phe
65                  70                  75                  80
Ile Gly Arg Lys Tyr Ser Glu Val Ala Ser Glu Ile Gln Thr Val Pro
                85                  90                  95
Tyr Thr Val Thr Ser Gly Ser Lys Gly Asp Ala Val Phe Glu Val Asp
            100                 105                 110
Gly Lys Gln Tyr Thr Pro Glu Glu Ile Gly Ala Gln Ile Leu Met Lys
        115                 120                 125
Met Lys Glu Thr Ala Glu Ala Tyr Leu Gly Glu Thr Val Thr Glu Ala
    130                 135                 140
Val Ile Thr Val Pro Ala Tyr Phe Asn Asp Ser Gln Arg Ala Ser Thr
145                 150                 155                 160
Lys Asp Ala Gly Arg Ile Ala Gly Leu Asp Val Lys Arg Ile Ile Pro
                165                 170                 175
Glu Pro Thr Ala Ala Ala Leu Ala Tyr Gly Ile Asp Lys Val Gly Asp
            180                 185                 190
Lys Lys Ile Ala Val Phe Asp Leu Gly Gly Gly Thr Phe Asp Ile Ser
        195                 200                 205
Ile Leu Glu Ile Gly Asp Gly Val Phe Glu Val Leu Ser Thr Asn Gly
    210                 215                 220
Asp Thr Leu Leu Gly Gly Asp Asp Phe Asp Glu Val Ile Ile Lys Trp
225                 230                 235                 240
Met Ile Glu Glu Phe Lys Lys Gln Glu Gly Ile Asp Leu Ser Lys Asp
                245                 250                 255
Asn Met Ala Leu Gln Arg Leu Lys Asp Ala Ala Glu Lys Ala Lys Ile
            260                 265                 270
Glu Leu Ser Gly Val Ser Ser Thr Glu Ile Asn Gln Pro Phe Ile Thr
        275                 280                 285
Met Asp Ala Gln Gly Pro Lys His Leu Ala Leu Thr Leu Thr Arg Ala
    290                 295                 300
Gln Phe Glu Lys Leu Ala Ala Ser Leu Ile Glu Arg Thr Lys Ser Pro
305                 310                 315                 320
Cys Ile Lys Ala Leu Ser Asp Ala Lys Leu Ser Ala Lys Asp Ile Asp
                325                 330                 335
Asp Val Leu Leu Val Gly Gly Met Ser Arg Met Pro Ala Val Gln Glu
            340                 345                 350
Thr Val Lys Glu Leu Phe Gly Lys Glu Pro Asn Lys Gly Val Asn Pro
        355                 360                 365
Asp Glu Val Val Ala Ile Gly Ala Ala Ile Gln Gly Gly Val Leu Gly
    370                 375                 380
Gly Glu Val Lys Asp Val Leu Leu Leu Asp Val Ile Pro Leu Ser Leu
385                 390                 395                 400
Gly Ile Glu Thr Leu Gly Gly Val Met Thr Thr Leu Val Glu Arg Asn
            405                 410                 415
Thr Thr Ile Pro Thr Gln Lys Lys Gln Ile Phe Ser Thr Ala Ala Asp
            420                 425                 430
```

Asn Gln Pro Ala Val Thr Ile Val Val Leu Gln Gly Glu Arg Pro Met
        435   440   445

Ala Lys Asp Asn Lys Glu Ile Gly Arg Phe Asp Leu Thr Asp Ile Pro
    450   455   460

Pro Ala Pro Arg Gly His Pro Gln Ile Glu Val Ser Phe Asp Ile Asp
465   470   475   480

Ala Asn Gly Ile Phe His Val Ser Ala Lys Asp Val Ala Ser Gly Lys
                485   490   495

Glu Gln Lys Ile Arg Ile Glu Ala Ser Ser Gly Leu Gln Glu Asp Glu
            500   505   510

Ile Gln Arg Met Val Arg Asp Ala Glu Ile Asn Lys Glu Glu Asp Lys
        515   520   525

Lys Arg Arg Glu Ala Ser Asp Ala Lys Asn Glu Ala Asp Ser Met Ile
    530   535   540

Phe Arg Ala Glu Lys Ala Ile Lys Asp Tyr Lys Glu Gln Ile Pro Glu
545   550   555   560

Thr Leu Val Lys Glu Ile Glu Glu Arg Ile Glu Asn Val Arg Asn Ala
                565   570   575

Leu Lys Asp Asp Ala Pro Ile Glu Lys Ile Lys Glu Val Thr Glu Asp
        580   585   590

Leu Ser Lys His Met Gln Lys Ile Gly Glu Ser Met Gln Ser Gln Ser
    595   600   605

Ala Ser Ala Ala Ala Ser Ser Ala Ala Asn Ala Lys Gly Gly Pro Asn
    610   615   620

Ile Asn Thr Glu Asp Leu Lys Lys His Ser Phe Ser Thr Lys Pro Pro
625   630   635   640

Ser Asn Asn Gly Ser Ser Glu Asp His Ile Glu Glu Ala Asp Val Glu
                645   650   655

Ile Ile Asp Asn Asp Asp Lys
                660

        <210> 506
        <211> 699
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 506
Ala Thr Gln Phe Thr Ser Glu Thr Thr Gly Phe Leu Val Gln Cys Pro
 1   5   10   15

Lys Leu Thr Gly Gly Ala Gln Leu Leu Lys Lys Pro Lys Arg Lys Pro
            20   25   30

Gly Arg Arg Thr Tyr Gly Lys Ser Leu Lys Ile Phe Ile Pro Gly Thr
        35   40   45

Leu Phe Val His Ala Arg Lys Gly Phe Gly Phe Val Ser Pro Asp Asn
    50   55   60

Pro Glu Glu Tyr Pro Phe Asp Ile Phe Val Pro Ala Arg Asp Leu Arg
65   70   75   80

Gly Ala Leu Asp Gly Asp His Val Ile Val Ser Val Leu Pro Tyr Pro
                85   90   95

Arg Asp Gly Gln Lys Leu Lys Gly Thr Ile Ser Glu Val Leu Ala Arg
            100   105   110

Gly Lys Thr Thr Leu Val Gly Thr Ile Thr Ser Leu Val Ser Pro Thr
    115   120   125

Ser Ala Leu Ala Tyr Thr Ser Met Ser Gly Ser Gln Ser Leu Ile Pro
    130   135   140

Val Glu Leu Leu Pro Gly Arg Thr Tyr Lys Ile Gly Asp Arg Ile Leu
145   150   155   160

Leu Ser Thr Pro Pro Trp Val Asp Lys Pro Gln Glu Gly Ala Ser Pro
                165   170   175

Ala Leu Gln Met Leu Glu Phe Ile Gly His Ile Thr Asn Ala Lys Ala
            180   185   190

                            776

```
Asp Phe Gln Ala Ile Gln Ala Glu Tyr Asn Leu Ala Glu Glu Phe Pro
        195                 200             205
Pro Glu Val Ile Glu Glu Ala Ser Leu Phe Ser Gln Lys His Ile Thr
    210                 215                 220
Gln Val Leu His Ser Arg Lys Asp Leu Arg Asp Leu Leu Cys Phe Thr
225                 230                 235                 240
Ile Asp Ser Ser Thr Ala Arg Asp Phe Asp Asp Ala Ile Ser Leu Thr
                245                 250                 255
Tyr Asp His Asn Asn Asn Tyr Ile Leu Gly Val His Ile Ala Asp Val
                260                 265                 270
Ser His Tyr Val Thr Pro His Ser His Leu Asp Lys Glu Ala Ala Lys
        275                 280                 285
Arg Cys Asn Ser Thr Tyr Phe Pro Gly Lys Val Ile Pro Met Leu Pro
    290                 295                 300
Ser Ala Leu Ser Asp Asn Leu Cys Ser Leu Lys Pro Asn Val Asp Arg
305                 310                 315                 320
Leu Ala Val Ser Val Phe Met Thr Phe Thr Lys Ser Gly His Leu Ser
                325                 330                 335
Asp Tyr Gln Ile Phe Arg Ser Val Ile Arg Ser Lys Tyr Arg Met Thr
                340                 345                 350
Tyr Asp Glu Val Asp Asn Ile Ile Glu Lys Lys His Ser His Pro Leu
        355                 360                 365
Ser Lys Ile Leu Asn Glu Met Ala Thr Leu Ser Lys Lys Phe Ser Asp
        370                 375                 380
Ile Arg Glu Glu Arg Gly Cys Ile Arg Phe Val Leu Pro Ser Val Thr
385                 390                 395                 400
Met Ser Leu Asp Asn Leu Gln Glu Pro Val Ala Leu Ile Glu Asn His
                405                 410                 415
Gln Thr Phe Ser His Lys Leu Ile Glu Glu Phe Met Leu Lys Ala Asn
        420                 425                 430
Glu Val Val Ala Tyr His Ile Ser His Gln Gly Val Ser Leu Pro Phe
        435                 440                 445
Arg Ser His Glu Pro Pro Asn Asp Glu Asn Leu Leu Ala Phe Gln Glu
    450                 455                 460
Leu Ala Lys Asn Met Gly Phe Asp Ile Thr Phe Thr Pro Thr Gln Glu
465                 470                 475                 480
Pro Asp Tyr Gln Tyr Leu Leu Gln Thr Thr Ser Ala Gly His Pro Leu
                485                 490                 495
Glu Gln Val Leu His Ser Gln Phe Val Arg Ser Met Lys Thr Ala Ser
        500                 505                 510
Tyr Ser Thr Glu Asn Lys Gly His Tyr Gly Leu Lys Leu Asp Tyr Tyr
        515                 520                 525
Thr His Phe Thr Ser Pro Ile Arg Arg Tyr Ile Asp Leu Ile Val His
        530                 535                 540
Arg Leu Leu Phe Asn Pro Leu Ser Ile Asp Gln Thr His Leu Glu Ile
545                 550                 555                 560
Ile Val Arg Ala Cys Ser Thr Lys Glu Arg Val Ser Ala Lys Ala Glu
                565                 570                 575
Asn Ser Phe Glu Asn Leu Lys Lys Thr Arg Phe Ile Asn Lys Phe Leu
                580                 585                 590
Gln Glu Gln Pro Lys Thr Thr Tyr His Ala Tyr Ile Ile Thr Ala Asn
        595                 600                 605
His Glu Gly Leu Ser Phe Val Val Thr Glu Phe Cys His Glu Gly Phe
        610                 615                 620
Ile Ala Ala Ala Glu Leu Pro Lys Glu Tyr Ser Leu Lys Lys Asn Ala
625                 630                 635                 640
Leu Pro Glu Ser Ile Pro Asp Lys Met Lys Pro Gly Ala Ser Ile Lys
                645                 650                 655
Val Thr Ile Asp Ser Val Asn Leu Leu Thr Gln Lys Ile Val Trp Ser
                660                 665                 670
```

777

```
Ile Ala Thr Thr Thr Glu Asp Lys Pro Lys Lys Ile Lys Lys Thr Pro
        675             680             685
Ser Lys Lys Lys Gly Thr Lys Lys Arg Ala Ser
    690             695
```

```
        <210> 507
        <211> 212
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 507
Arg Lys Arg Leu Leu Arg Lys Lys Glu Arg Lys Lys Glu Pro Arg Asn
1               5               10              15
Val Leu Gln Glu His Phe Phe Leu Ser Glu Asp Val Ile Thr Leu Ala
            20              25              30
Gln Gln Leu Leu Gly His Lys Leu Ile Thr Thr His Glu Gly Leu Ile
            35              40              45
Thr Ser Gly Tyr Ile Val Glu Thr Glu Ala Tyr Arg Gly Pro Asp Asp
    50              55              60
Lys Ala Cys His Ala Tyr Asn Tyr Arg Lys Thr Gln Arg Asn Arg Ala
65              70              75              80
Met Tyr Leu Lys Gly Gly Ser Ala Tyr Leu Tyr Arg Cys Tyr Gly Met
            85              90              95
His His Leu Leu Asn Val Val Thr Gly Pro Glu Asp Ile Pro His Ala
            100             105             110
Val Leu Ile Arg Ala Ile Leu Pro Asp Gln Gly Lys Glu Leu Met Ile
            115             120             125
Gln Arg Arg Gln Trp Arg Asp Lys Pro Pro His Leu Leu Thr Asn Gly
    130             135             140
Pro Gly Lys Val Cys Gln Ala Leu Gly Ile Ser Leu Glu Asn Asn Arg
145             150             155             160
Gln Arg Leu Asn Thr Pro Ala Leu Tyr Ile Ser Lys Glu Lys Ile Ser
            165             170             175
Gly Thr Leu Thr Ala Thr Ala Arg Ile Gly Ile Asp Tyr Ala Gln Glu
            180             185             190
Tyr Arg Asp Val Pro Trp Arg Phe Leu Leu Ser Pro Glu Asp Ser Gly
    195             200             205
Lys Val Leu Ser
    210
```

```
        <210> 508
        <211> 262
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 508
Cys Pro Met Glu Ile Ser Pro Ile Pro Arg Arg Phe Gly Lys Ser Phe
1               5               10              15
Ile Leu Asn Asn Leu Lys Leu Tyr Ser Lys Glu Thr Asn Ala His Phe
            20              25              30
Leu Ile Ser Cys Arg Arg Ile Met Lys Lys Tyr Phe Ile Thr Gly Leu
            35              40              45
Val Ile Leu Leu Pro Leu Ala Ile Thr Ile Ala Ile Val Thr Met Ile
    50              55              60
Met Asn Phe Leu Thr Gln Pro Phe Val Gly Leu Ala Ser Glu Phe Phe
65              70              75              80
Glu Lys Phe Ser Phe Tyr Thr Lys His Arg Ala Leu Leu Lys Phe Val
            85              90              95
Leu Gln Ile Ile Leu Leu Phe Gly Leu Phe Phe Ala Thr Val Leu Leu
            100             105             110
```

```
Gly Phe Leu Thr Arg Ile Met Ile Phe Lys Ser Leu Leu Ser Ile Tyr
        115             120             125
Asp Lys Ile Leu His Arg Ile Pro Ile Ile Lys Thr Val Tyr Lys Ala
        130             135     -       140
Ala Gln Gln Val Met Thr Thr Ile Phe Gly Ser Lys Ser Gly Ser Phe
145             150             155             160
Lys Gln Val Val Met Val Pro Phe Pro Asn Ala Asn Val Gln Cys Ile
                165             170             175
Gly Leu Val Ala Gly Asp Ala Pro Thr Val Cys Cys Thr Gly Glu Lys
            180             185             190
Glu Asp Asp Pro Leu Val Thr Val Phe Ile Pro Thr Thr Pro Asn Pro
        195             200             205
Thr Ser Gly Phe Leu Thr Leu Phe Arg Lys Ser Asp Ile Val Phe Leu
        210             215             220
Asp Met Lys Ile Glu Asp Ala Phe Lys Tyr Ile Ile Ser Cys Gly Val
225             230             235             240
Leu Ser Thr Pro Met Ala Cys Pro Ser Ser Pro Leu Pro Asp Glu Leu
                245             250             255
His Gln Asp Gln Gly Ser
            260


        <210> 509
        <211> 75
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 509
Ser Thr Pro Tyr Pro Gln Phe Pro Leu Ser Gly Glu Ile Lys Lys Phe
1               5               10              15
Asn Ile Glu Leu Phe Met Thr Arg Met Ser Lys Gln Ala Arg Arg Arg
            20              25              30
Ala Lys Ser Pro Lys Lys Arg Lys Pro Lys Tyr Ala Ile Val His Pro
        35              40              45
Ala Pro Ala Pro Arg Ile Val Tyr Lys Leu His Thr Asn Ala Leu Ser
    50              55              60
Thr Ser Asp Ser Ile Phe Ile Pro Lys Ile Gly
65              70              75


        <210> 510
        <211> 56
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 510
Ser Arg Ile Met Ser Arg His Arg Ser Tyr Gly Lys Ser Val Lys Gly
1               5               10              15
Val Thr Lys Arg Asn Val Leu Lys Arg Phe Glu Arg Val Glu Val Leu
            20              25              30
Arg Lys Leu Gly Arg Trp Asn Asp Ser Thr Ala Lys Lys Val Thr Gly
        35              40              45
Leu Pro Lys Thr Pro Ile Leu Lys
    50              55


        <210> 511
        <211> 170
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 511
Asn Lys Phe Val Phe Leu Tyr Gly Asn Phe Ile Arg Val Thr Gln Glu
1               5               10              15
```

779

```
Lys Ile Lys Ile His Val Ser Asn Glu Gln Thr Cys Ile Pro Ile His
        20                  25                  30
Leu Val Ser Val Glu Lys Leu Val Leu Thr Leu Leu Glu His Leu Lys
        35                  40                  45
Val Thr Thr Asn Glu Ile Phe Ile Tyr Phe Leu Glu Asp Lys Ala Leu
        50                  55                  60
Ala Glu Leu His Asp Lys Val Phe Ala Asp Pro Ser Leu Thr Asp Thr
65                  70                  75                  80
Ile Thr Leu Pro Ile Asp Ala Pro Gly Asp Pro Ala Tyr Pro His Val
                85                  90                  95
Leu Gly Glu Ala Phe Ile Ser Pro Gln Ala Ala Leu Arg Phe Leu Glu
            100                 105                 110
Asn Thr Ser Pro Asn Gln Glu Asp Ile Tyr Glu Glu Ile Ser Arg Tyr
            115                 120                 125
Leu Val His Ser Ile Leu His Met Leu Gly Tyr Asp Asp Thr Ser Ser
    130                 135                 140
Glu Glu Lys Arg Lys Met Arg Val Lys Glu Asn Gln Ile Leu Cys Met
145                 150                 155                 160
Leu Arg Lys Lys His Ala Leu Leu Thr Ala
                165                 170


        <210> 512
        <211> 390
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 512
Gln Leu Asn Met Leu His Ile Leu Leu Ala Ile Phe Cys Ile Leu Leu
1               5                   10                  15
Phe Leu Ala Phe Gly Leu Thr Gln Pro Ser Cys His Gly Ser Ser Lys
        20                  25                  30
Phe Leu Lys Thr Leu Asn Gln Arg Phe Phe Lys Asp Lys Gly Arg Glu
        35                  40                  45
Tyr Pro Pro Phe Pro Ser Ala Pro Thr Ile Leu Ala Thr Leu Leu Cys
    50                  55                  60
Ile Leu Tyr Gly Ala Leu Gly Thr Lys Leu Tyr Thr Leu Leu Pro Pro
65                  70                  75                  80
Lys Thr Ala His Lys Asp Leu Leu Phe Trp Pro Leu Tyr Ser Leu Ser
                85                  90                  95
Ala Leu Ile Ala Tyr Gly Phe Leu Pro Pro Trp Ile Ser Thr Lys Val
            100                 105                 110
Pro Lys Glu Thr Thr Ala His Leu Arg Phe Leu Ala Ser Val Phe Gln
            115                 120                 125
Leu Gly Leu Phe Pro Leu Gln Leu Leu Phe Tyr Arg Arg Arg Pro Asn
    130                 135                 140
Gln Gln Val Arg Ser Ser Thr Ser Phe Gln Ser Gln Leu Ser Glu Ala
145                 150                 155                 160
Leu Ser Ala Phe Asp Asn Leu Ile Val Arg Glu Val Met Ile Pro Lys
                165                 170                 175
Val Asp Ile Phe Ala Leu Pro Glu Glu Thr Thr Leu Gln Glu Ala Leu
            180                 185                 190
Val Leu Val Ser Glu Glu Gly Tyr Ser Arg Val Pro Val Tyr Lys Lys
            195                 200                 205
Asn Leu Asp Asn Ile Thr Gly Ile Leu Leu Val Lys Asp Leu Leu Leu
    210                 215                 220
Leu Tyr Thr Ser Ser His Asp Leu Ser Gln Pro Ile Ser Ser Val Ala
225                 230                 235                 240
Lys Pro Pro Phe Tyr Ala Pro Glu Ile Lys Lys Ala Ser Ser Leu Leu
                245                 250                 255
Gln Glu Phe Arg Gln Lys His Arg His Leu Ala Ile Ile Val Asn Glu
            260                 265                 270
```

```
Tyr Gly Phe Thr Glu Gly Ile Ala Thr Met Glu Asp Ile Ile Glu Glu
        275                 280                 285
Ile Ile Gly Glu Ile Ala Asp Glu His Asp Val Gln Glu Asn Thr Pro
        290                 295                 300
Tyr Lys Lys Ile Gly Ser Ser Trp Ile Val Asp Gly Arg Met Asn Ile
305                 310                 315                 320
Ser Asp Ala Glu Glu Tyr Phe Asn Leu Lys Ile Asp His Glu Asn Ser
                325                 330                 335
Tyr Asp Thr Leu Gly Gly His Val Phe His Lys Val Gly Ala Val Pro
        340                 345                 350
Gln Lys Gly Met Arg Ile His His Glu Asn Phe Asp Ile Glu Ile Ile
        355                 360                 365
Thr Cys Thr Glu Arg Asn Val Gly Lys Leu Lys Ile Thr Pro Arg Lys
        370                 375                 380
Arg Lys Phe Asn Ile Ser
385                 390
```

<210> 513
<211> 116
<212> PRT
<213> Chlamydia pneumoniae

<400> 513
```
Met Ser Asp Ile Gln Lys Glu Glu His Gly Ser Thr Thr Ile Phe His
1               5                   10                  15
Leu His Gly Lys Leu Asp Gly Ile Ser Ser Pro Glu Val Gln Glu Asn
            20                  25                  30
Ile Ser Gln Ser Leu Ala Ala Gly Ser Lys Asn Ile Ile Leu Asp Cys
            35                  40                  45
Ala His Leu Asp Tyr Met Ser Ser Ala Gly Ile Arg Val Leu Leu Gln
        50                  55                  60
Ser Tyr His Gln Val Gly Gln His Ser Gly Lys Ile Val Leu Thr Thr
65                  70                  75                  80
Val Pro Lys Thr Ile Glu Gln Thr Leu Tyr Val Thr Gly Phe Leu Ser
                85                  90                  95
Tyr Phe Lys Ile Phe Asn Thr Val Asp Glu Ala Ile Gln Thr Leu Asn
                100                 105                 110
Lys Asp Gly Asp
            115
```

<210> 514
<211> 625
<212> PRT
<213> Chlamydia pneumoniae

<400> 514
```
Ser Leu Pro Leu Thr Met Arg Arg Ser Val Cys Tyr Val Asn Pro Ser
1               5                   10                  15
Ile Ala Arg Ala Gly Gln Ile Ser Thr Trp Lys Phe Leu Tyr Ser Leu
            20                  25                  30
Ala Thr Pro Leu Pro Ala Gly Thr Lys Cys Lys Phe Asp Leu Ala Gly
            35                  40                  45
Ser Gly Lys Pro Thr Asp Trp Glu Ala Pro Ala Thr Asp Leu Ser Gln
        50                  55                  60
Thr Arg Asn Val Ile Tyr Ala Glu Met Pro Glu Gly Glu Ile Ile Glu
65                  70                  75                  80
Ala Thr Ala Ile Pro Val Lys Asp Asn Pro Val Pro Gln Phe Glu Phe
                85                  90                  95
Thr Leu Pro Tyr Glu Leu Gln Val Gly Glu Thr Leu Thr Ile Val Met
                100                 105                 110
```

781

Gly Ala Ser Pro Asn His Pro Gln Val Asp Asp Ala Gly Asn Gly Ala
        115   120   125
Gln Leu Phe Ala Gln Arg Arg Lys Pro Phe Tyr Leu Tyr Ile Asp Pro
    130   135   140
Thr Gly Glu Gly Asn Tyr Asp Glu Pro Asp Val Phe Ser Met Asp Ile
145   150   155   160
Arg Gly Asn Val Leu Lys Lys Ile Glu Ile Phe Thr Pro Ser Tyr Val
                165   170   175
Val Lys Asn Lys Arg Phe Asp Ile Thr Val Arg Phe Glu Asp Glu Phe
            180   185   190
Gly Asn Leu Thr Asn Phe Ser Pro Glu Glu Thr Arg Ile Glu Leu Ser
    195   200   205
Tyr Glu His Leu Arg Glu Asn Leu Asn Trp Gln Leu Phe Ile Pro Glu
    210   215   220
Thr Gly Phe Val Ile Leu Pro Asn Leu Tyr Phe Asn Glu Pro Gly Ile
225   230   235   240
Tyr Arg Ile Gln Leu Lys Asn Leu Ser Thr Gln Glu Ile Phe Ile Ser
                245   250   255
Ala Pro Ile Lys Cys Phe Ala Asp Ser Ala Pro Asn Leu Met Trp Gly
            260   265   270
Leu Leu His Gly Glu Ser Glu Arg Val Asp Ser Glu Glu Asn Ile Glu
    275   280   285
Thr Cys Met Arg Tyr Phe Arg Asp Asp Arg Ala Leu Asn Phe Tyr Ala
    290   295   300
Ser Ser Ser Phe Glu Asn Gln Glu Asn Leu Ser Pro Asp Ile Trp Lys
305   310   315   320
Leu Ile Asn Gln Thr Val Ser Asp Phe Asn Glu Glu Asp Arg Phe Ile
                325   330   335
Thr Leu Ser Gly Phe Gln Tyr Ser Gly Glu Pro His Leu Glu Gly Val
            340   345   350
Arg His Ile Leu His Thr Lys Glu Thr Lys Ser His Ser Lys His Lys
    355   360   365
Glu Tyr Lys His Ile Pro Leu Ala Lys Leu Tyr Lys Ser Thr Val Asn
    370   375   380
His Asp Met Ile Ser Ile Pro Ser Phe Thr Ala Ser Lys Glu His Gly
385   390   395   400
Phe Asp Phe Glu Asn Phe Tyr Pro Glu Phe Glu Arg Val Val Glu Ile
                405   410   415
Tyr Asn Ala Trp Gly Ser Ser Glu Thr Thr Ala Ala Leu Asn Asn Pro
            420   425   430
Phe Pro Ile Gln Gly Lys Asp Ser Glu Asp Pro Arg Gly Thr Val Ile
            435   440   445
Glu Gly Leu Lys Lys Asn Leu Arg Phe Gly Phe Val Ala Gly Gly Leu
    450   455   460
Asp Asp Arg Gly Ile Tyr Lys Asp Tyr Phe Asp Ser Pro Gln Val Gln
465   470   475   480
Tyr Ser Pro Gly Leu Thr Ala Ile Ile Cys Asn Lys Tyr Thr Arg Glu
            485   490   495
Ser Leu Val Glu Ala Leu Phe Ala Arg His Cys Tyr Ala Thr Thr Gly
            500   505   510
Pro Arg Ile Val Leu Ser Phe Asn Ile Thr Ser Ala Pro Met Gly Ser
    515   520   525
Glu Leu Ser Thr Gly Ser Lys Pro Gly Leu Asn Val Asn Arg His Ile
    530   535   540
Ser Gly His Val Ala Gly Thr Ala Leu Leu Lys Thr Val Glu Ile Ile
545   550   555   560
Arg Asn Gly Glu Val Leu His Thr Phe Phe Pro Asp Ser Asn Asn Leu
                565   570   575
Asp Tyr Glu Tyr Asp Asp Met Val Pro Leu Ser Ser Val Thr Leu Lys
        580   585   590

782

```
Asp Pro Asn Gly Lys Ala Pro Phe Val Phe Tyr Tyr Leu Arg Val Thr
        595             600             605
Gln Ala Asp Asn Ala Met Ala Trp Ser Ser Pro Ile Trp Val Asp Leu
    610             615             620
Asn
625


    <210> 515
    <211> 413
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 515
Val Pro Ile Cys Leu Ala Gly Pro Ser Leu Lys Gly Val Lys Asn Gln
1           5               10              15
Ile Ala Ala Lys Lys Lys His Val Thr Lys Gln Ser Thr Val Leu Gln
        20              25              30
Asn Leu Glu Arg Ile Val His Gln Ser Val His Gln Met Thr Thr Cys
    35              40              45
Leu Pro Gln Pro Pro Lys Thr Ser Pro Leu Tyr Ser Ile Phe Glu Lys
    50              55              60
Leu Asp Ala Gln Glu Arg Leu Ser Ser Glu Asp Ala Leu His Leu Leu
65              70              75              80
Leu Leu Thr Asn Lys Glu Asp Gln Arg Thr Leu Trp Asn Phe Ala Asp
            85              90              95
Gln Val Arg Lys Gln Arg Val Gly Asp Thr Val Tyr Tyr Ser Ser Thr
        100             105             110
Leu Tyr Leu Tyr Pro Thr Asn Phe Cys Asp Phe Ser Cys Lys Phe Cys
    115             120             125
Ser Phe Tyr Ala Lys Pro Gly Asp Pro Lys Gly Trp Leu Tyr Ser Pro
    130             135             140
Asp Asp Leu Leu Gln Gln Ile Gln Asn Ile Lys Thr Pro Ile Thr Glu
145             150             155             160
Val His Ile Val Gly Gly Cys Phe Pro Ser Cys Asn Leu Gln Tyr Tyr
            165             170             175
Ser Asp Leu Phe Thr Lys Ile Lys Glu Tyr Asp Pro Gln Ile His Ile
            180             185             190
Lys Ala Leu Thr Ala Ile Glu Tyr Ala Tyr Leu Ser Asp Leu Asp Asn
        195             200             205
Leu Ser Ile Arg Asp Val Leu Leu Thr Leu Lys Asp Ala Gly Leu Asp
210             215             220
Ser Ile Pro Gly Gly Gly Ala Glu Ile Leu Val Asp Lys Ile Arg Asn
225             230             235             240
Phe Leu Ala Pro Lys Arg Leu Ser Ser Ser Asp Phe Leu Asn Ile His
            245             250             255
Lys Met Ala His Gln Leu Gly Ile His Ser Asn Ile Thr Met Leu Cys
            260             265             270
Tyr His Lys Glu Gly Pro Glu Asp Leu Val Thr His Met Val Lys Val
        275             280             285
Arg Asp Leu Gln Asp Glu Thr Gln Gly Phe Lys Asn Phe Ile Leu Leu
    290             295             300
Lys Phe Ala Gln Glu Asn Asn Val Leu Gly Lys Arg Leu Arg Lys Ser
305             310             315             320
Gly Gln Gly His Ala Ile Pro Leu Lys Ser Leu Met Ala Val Ala Arg
            325             330             335
Ile Phe Leu Asp Asn Phe Ser Asn Met Lys Ala Leu Trp Asn Tyr Leu
            340             345             350
Gly Ile Glu Ala Ala Leu Asp Leu Leu Ser Cys Gly Ala Asn Asp Leu
        355             360             365
Ser Ser Thr His Met Gly Glu Lys Val Phe Gln Met Ala Ser Ser Lys
370             375             380
```

Glu Pro Ile Lys Met Asp Ala Glu Gly Met Ala Ala Leu Ile Thr Gln
385   390   395   400
Gln Gly Arg Thr Pro Cys Leu Thr Asn Ser Ser His Val
            405   410

<210> 516
<211> 277
<212> PRT
<213> Chlamydia pneumoniae

<400> 516
Gly Asn Gly Gly Pro His His Thr Thr Arg Glu Asn Ala Met Ser Asn
1   5   10   15
Gln Leu Gln Pro Cys Ile Ser Leu Gly Cys Val Ser Tyr Ile Asn Ser
            20   25   30
Phe Pro Leu Ser Leu Gln Leu Ile Lys Arg Asn Asp Ile Arg Cys Val
            35   40   45
Leu Ala Pro Pro Ala Asp Leu Leu Asn Leu Leu Ile Glu Gly Lys Leu
            50   55   60
Asp Val Ala Leu Thr Ser Ser Leu Gly Ala Ile Ser His Asn Leu Gly
65   70   75   80
Tyr Val Pro Gly Phe Gly Ile Ala Ala Asn Gln Arg Ile Leu Ser Val
            85   90   95
Asn Leu Tyr Ala Ala Pro Thr Phe Phe Asn Ser Pro Gln Pro Arg Ile
            100   105   110
Ala Ala Thr Leu Glu Ser Arg Ser Ser Ile Gly Leu Leu Lys Val Leu
            115   120   125
Cys Arg His Leu Trp Arg Ile Pro Thr Pro His Ile Leu Arg Phe Ile
            130   135   140
Thr Thr Lys Val Leu Arg Gln Thr Pro Glu Asn Tyr Asp Gly Leu Leu
145   150   155   160
Leu Ile Gly Asp Ala Ala Leu Gln His Pro Val Leu Pro Gly Phe Val
            165   170   175
Thr Tyr Asp Leu Ala Ser Gly Trp Tyr Asp Leu Thr Lys Leu Pro Phe
            180   185   190
Val Phe Ala Leu Leu Leu His Ser Thr Ser Trp Lys Glu His Pro Leu
            195   200   205
Pro Asn Leu Ala Met Glu Glu Ala Leu Gln Gln Phe Glu Ser Ser Pro
            210   215   220
Glu Glu Val Leu Lys Glu Ala His Gln His Thr Gly Leu Pro Pro Ser
225   230   235   240
Leu Leu Gln Glu Tyr Tyr Ala Leu Cys Gln Tyr Arg Leu Gly Glu Glu
            245   250   255
His Tyr Glu Ser Phe Glu Lys Phe Arg Glu Tyr Tyr Gly Thr Leu Tyr
            260   265   270
Gln Gln Ala Arg Leu
            275

<210> 517
<211> 244
<212> PRT
<213> Chlamydia pneumoniae

<400> 517
Glu Lys Asn Thr Thr Lys Ala Leu Lys Asn Ser Gly Asn Ile Met Glu
1   5   10   15
Pro Ser Thr Asn Lys Pro Asp Cys Lys Lys Ile Phe Asp Ser Ile Ala
            20   25   30
Ser Lys Tyr Asp Arg Thr Asn Thr Ile Leu Ser Leu Gly Met His His
            35   40   45

784

```
Phe Trp Asn Arg Ser Leu Ile Gln Ile Leu Gly Ser Gly Tyr Ser Leu
    50                      55                  60
Leu Asp Leu Cys Ala Gly Thr Gly Lys Val Ala Lys Arg Tyr Ile Ala
65                  70                  75                      80
Ala His Pro Gln Ala Ser Val Thr Leu Val Asp Phe Ser Ser Ala Met
                85                  90                  95
Leu Asp Ile Ala Lys Gln His Leu Pro Gln Gly Ser Cys Ser Phe Ile
                100                 105                 110
His Ser Asp Ile Asn Gln Leu Pro Leu Glu Asn His Ser Tyr Pro Leu
            115                 120                 125
Ala Ala Met Ala Tyr Gly Leu Arg Asn Leu Ser Asp Pro His Lys Ala
        130                 135                 140
Leu Gln Glu Ile Ser Arg Val Leu Met Pro Ser Gly Lys Leu Gly Ile
145                 150                 155                 160
Leu Glu Leu Thr Pro Pro Lys Lys Thr His Pro Thr Tyr Ser Ala His
                165                 170                 175
Lys Leu Tyr Leu Arg Ala Val Val Pro Trp Ile Gly Lys Ser Val Ser
                180                 185                 190
Lys Asp Pro Asp Ala Tyr Ser Tyr Leu Ser Lys Ser Ile Gln Gln Leu
            195                 200                 205
Pro Lys Asp His Asp Leu Glu Asp Leu Phe Ser Lys Ser Gly Phe Tyr
        210                 215                 220
Ile Ala Lys Lys Lys Lys Leu Phe Leu Gly Ala Ala Thr Ile Trp Leu
225                 230                 235                 240
Leu Glu Lys Gln


        <210> 518
        <211> 550
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 518
Arg Ile Ser Ile Ser Phe Arg Val Ser Trp Phe Val Lys Ile Ile Leu
1                   5                   10                  15
Ala Val Leu Gly Arg Ala Ile Ala Lys Ala Tyr Tyr Val Cys Met Val
            20                  25                  30
Ala Arg Gly Leu Cys Asp Phe Pro Thr Leu Val Pro Asn Glu Arg Leu
        35                  40                  45
Pro Ile Gly Pro Phe Phe Val Pro Gln His Thr Ser Gly Ala Lys Gly
    50                  55                  60
Lys Glu Phe Ala Lys Arg Asn Phe Ser Ile Ile Ser Gly Leu Asp Asp
65                  70                  75                      80
Ile Leu Lys Leu Cys Ile Leu Gln Arg Arg Pro Phe Ala Leu Gln Trp
                85                  90                  95
Asp Asn Leu Ser Val Lys Ser Asp Tyr Glu Glu Ala Gly Pro Ala Ile
            100                 105                 110
Gly Ile Arg Ser Leu Glu Pro Gln Val Ser Gln Ile Ser Pro Ala His
        115                 120                 125
Gly Arg Leu Cys Ser Thr Leu Val Gln Trp Ala Pro Ile Leu Gly Ser
        130                 135                 140
Glu Glu Gln Leu Val Trp Leu Glu Glu Thr Met Lys Arg Leu Lys Phe
145                 150                 155                 160
Pro Lys Ser Leu Gly Ser Lys Asp Ala Val Ile Val Asp Ser Glu Met
                165                 170                 175
Val Pro Val Asn Ala Asn Pro Thr Gln Glu Ile Pro Ala Ala Ser Glu
                180                 185                 190
Thr Val Glu Ser Ser Pro Val Ala Pro Gly Asn Thr Thr Asp Thr Met
            195                 200                 205
Pro Ala Ala Ser Gly Thr Thr Asp Thr Thr Ser Gly Val Ser Glu Ala
    210                 215                 220
```

785

```
Ala Ala Ala Glu Ala Ala Val Asp Ser Thr Pro Gly Thr Glu Glu Glu
225                 230                 235                 240
Pro Ser Phe Ser Leu Arg Tyr Ala Leu Val Val Gln Asn Val Pro Tyr
                245                 250                 255
Pro Glu Pro Pro Lys Glu Pro Glu Val Met Phe Thr Asp Glu Glu Lys
            260                 265                 270
Ser Leu Ile Leu Glu Ala Thr Arg Ala Arg Arg Met Glu Leu Asp Leu
        275                 280                 285
Tyr Asn Gly Tyr Leu Ala Asp Tyr Glu Leu Ser Lys Asp Glu Ile Gln
    290                 295                 300
Lys His Val Pro Asp Leu Pro Glu Asn Trp Arg Thr Asn Trp Arg Trp
305                 310                 315                 320
Ser Glu Arg Leu Tyr Lys Phe Phe Phe Lys Thr Lys Lys Glu Gly Leu
                325                 330                 335
Glu Glu Ile Phe Leu Asn Lys Glu Leu Gly Asn Met Ile Leu Ala Arg
            340                 345                 350
Gly Leu Ala Ala Thr Gln Ser Gln Ala Arg Ile Lys Val Phe Asn Ser
            355                 360                 365
Leu Val Ala Trp Leu Leu Gln Ser Phe Asn Val Gly Arg Ser Cys Thr
    370                 375                 380
Ala Lys Pro Leu Pro Thr Ser Lys Leu Asp Leu Phe Lys Ser Glu Phe
385                 390                 395                 400
Glu Ser Lys Pro Lys Asn Asn Ile Leu Thr Glu Phe Leu Val Ala Ser
                405                 410                 415
Asp Glu Glu Ile Leu Phe Lys Gly Leu Arg Val Leu Glu Pro Gly Ile
            420                 425                 430
Glu Gly Trp Tyr Asp His Pro Asp Gln Ala Gly Glu Ile Arg Ser Val
            435                 440                 445
Leu Glu Gly Leu Val Gln Ala Gly Arg Ile Ser Gly Tyr Trp Glu Asn
    450                 455                 460
Gln Pro Phe Gly Arg Phe Val Leu Arg Gly Val Gly Glu Arg Arg Thr
465                 470                 475                 480
Glu Leu Val Glu Leu Leu Glu Ser Leu Val Ala Ser Gly Glu Ile Met
                485                 490                 495
Gln Phe Phe Glu Ser Ser Asp Glu Glu Gly Ala Phe Ile Ile Asp Asn
            500                 505                 510
Glu Pro Ser Lys Thr Ala Met Leu Lys Gln Arg Phe Lys Ser Cys Val
            515                 520                 525
Arg Thr Lys Leu Val Gly Ser Phe Ala Asp Glu Ser Leu Pro Arg Gly
    530                 535                 540
Arg Phe Thr Ile Leu Val
545                 550
```

        <210> 519
        <211> 281
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 519
```
Phe Ile Met Ser Ser Leu Leu Ser Cys Gly Arg Ile Glu Pro Thr Arg
1               5                   10                  15
Val Thr Cys Ser Leu Lys Thr Tyr Leu Glu Asp Thr Ser Gln Asn Gln
            20                  25                  30
Leu Ser Thr Arg Leu Val Arg Ala Ser Val Ile Phe Leu Cys Ala Leu
        35                  40                  45
Leu Ile Ile Leu Val Cys Val Ala Leu Ser Ser Leu Ile Pro Ser Ile
        50                  55                  60
Met Ala Leu Ala Thr Ser Phe Thr Val Met Gly Leu Ile Leu Phe Val
65                  70                  75                  80
Met Ser Leu Leu Gly Asp Val Ala Ile Ile Ser Tyr Leu Thr Tyr Ser
                85                  90                  95
```

```
Thr Val Thr Ser Tyr Arg Gln Asn Lys Arg Ala Phe Glu Ile His Lys
        100                 105                 110
Pro Ala Arg Ser Val Tyr Tyr Glu Gly Val Arg His Trp Asp Leu Gly
        115                 120                 125
Arg Ser Ser Leu Gly Thr Gly Glu Ile Pro Ile Val Arg Thr Leu Phe
        130                 135                 140
Ser Pro Phe Gln Asn His Gly Leu Asn His Ala Leu Ala Ala Lys Ile
145                 150                 155                 160
Phe Leu Phe Met Glu His Phe Ser Pro Glu Pro Pro Asn Glu Pro Leu
                165                 170                 175
Val Asp Trp Ala Cys Leu Ile Arg Asp Phe Arg Pro His Val Ser Ser
        180                 185                 190
Leu Cys Phe Val Ile Glu Lys Gln Gly Ser Ser Leu Arg Thr Lys Glu
        195                 200                 205
Gly Asn Thr Ile Cys Glu Ala Phe Arg Ser Asp Tyr Asp Ala His Phe
210                 215                 220
Ala Met Val Asp Cys Tyr Arg Leu Ile His Ser Lys Leu Ile Ile Glu
        225                 230                 235                 240
Lys Met Gly Leu Lys Asn Ile Asp Ile Ile Pro Ser Val Met Val Arg
                245                 250                 255
Glu Asp Tyr Pro Ser Arg Pro Gly Glu Gly Tyr Arg Glu Gly Leu Leu
                260                 265                 270
Arg Met Tyr Gly Gly Lys Gly Ala Leu
                275                 280
```

        <210> 520
        <211> 325
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 520

```
Phe Met Met Thr Tyr Pro Val Pro Gln Asn Pro Leu Leu Leu Arg Ile
1               5                   10                  15
Leu Arg Leu Met Asp Ala Phe Ser Lys Ser Asp Asp Glu Arg Asp Phe
        20                  25                  30
Tyr Leu Asp Arg Val Glu Gly Phe Ile Leu Tyr Ile Asp Leu Asp Lys
        35                  40                  45
Asp Gln Glu Asp Leu Asn Lys Ile Tyr Gln Glu Leu Glu Glu Asn Ala
        50                  55                  60
Glu Arg Tyr Cys Leu Ile Pro Lys Leu Thr Phe Tyr Glu Val Lys Lys
65                  70                  75                  80
Ile Met Glu Thr Phe Ile Asn Glu Lys Ile Tyr Asp Ile Asp Thr Lys
                85                  90                  95
Glu Lys Phe Leu Glu Ile Leu Gln Ser Lys Asn Ala Arg Glu Gln Phe
        100                 105                 110
Leu Glu Phe Ile Tyr Asp His Glu Ala Glu Leu Glu Lys Trp Gln Gln
        115                 120                 125
Phe Tyr Val Glu Arg Ser Arg Ile Arg Ile Ile Glu Trp Leu Arg Asn
        130                 135                 140
Asn Lys Phe His Phe Val Phe Glu Glu Asp Leu Asp Phe Thr Lys Asn
145                 150                 155                 160
Val Leu Glu Gln Leu Lys Ile His Leu Phe Asp Ala Lys Val Gly Lys
                165                 170                 175
Glu Ile Thr Gln Ala Arg Gln Leu Leu Ser Asn Lys Ala Lys Ile Tyr
                180                 185                 190
Tyr Ser Asn Glu Ala Leu Asn Pro Arg Pro Lys Arg Gly Arg Pro Pro
        195                 200                 205
Lys Gln Ser Ala Lys Val Glu Thr Glu Thr Thr Ile Ser Ser Asp Ile
210                 215                 220
Tyr Thr Lys Val Pro Gln Ala Ala Arg Arg Phe Leu Phe Leu Pro Glu
225                 230                 235                 240
```

```
Ile Thr Ser Pro Ser Ser Ile Thr Phe Ser Glu Lys Phe Asp Thr Glu
             245             250             255
Glu Glu Phe Leu Ala Asn Leu Arg Gly Ser Thr Arg Val Glu Asp Gln
         260             265             270
Leu Asn Leu Thr Asn Leu Ser Glu Arg Phe Ala Ser Leu Lys Glu Leu
         275             280             285
Ser Ala Lys Leu Gly Tyr Asp Ser Leu Ser Thr Gly Asp Phe Phe Gly
         290             295             300
Asp Asp Asp Glu Lys Val Val Thr Lys Thr Lys Gly Ser Lys Arg Gly
305             310             315             320
Arg Lys Lys Ser Ser
                325


        <210> 521
        <211> 268
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 521
Gln Pro Thr Lys Leu Arg Ile Leu Val Tyr Trp Met Ala Phe Tyr Ser
1             5             10            15
Pro Ser Thr Ile Ser Lys Tyr Phe Ile Tyr Ser Gly Ala Gly Asn Arg
         20            25            30
Phe Leu Leu Gly Glu Thr Leu Pro Glu Val Glu Asp Val Arg Phe Leu
         35            40            45
Cys Gln Glu Thr Arg Val Asp Gly Phe Leu Tyr Leu Lys Pro Ser Ser
50            55            60
Cys Ala Asp Ala Gln Leu Ile Ile Phe Asn Ser Asp Gly Ser Arg Pro
65            70            75            80
Thr Met Cys Gly Asn Gly Leu Arg Cys Ala Ile Ala His Leu Ala Ser
             85            90            95
Gln Lys Gly Lys Ser Asp Ile Ser Val Ser Thr Asp Ser Gly Leu Tyr
         100           105           110
Ser Gly Tyr Phe Tyr Ser Trp Asp Arg Val Leu Val Asp Met Thr Leu
         115           120           125
Ala Asp Trp Arg Ala Ser Val His Arg Leu Glu Ser Arg Pro Asp Pro
         130           135           140
Leu Pro Lys Glu Val Val Cys Ile His Thr Gly Val Pro His Ala Val
145           150           155           160
Val Ile Leu Pro Glu Ile Ser Thr Leu Asp Leu Ser Ile Leu Gly Pro
             165           170           175
Phe Leu Arg Tyr His Gln Thr Phe Ser Pro Asp Gly Val Asn Val Asn
         180           185           190
Phe Val Gln Ile Leu Gly His Cys Gln Leu Arg Val Arg Thr Tyr Glu
         195           200           205
Arg Gly Val Glu Gly Glu Thr Ala Ala Cys Gly Thr Gly Ala Leu Ala
         210           215           220
Ser Ala Leu Val Val Ser Asn Ser Tyr Gly Trp Lys Glu Ser Ile Gln
225           230           235           240
Ile His Thr Trp Gly Gly Glu Leu Met Thr Val Ser Gln Asn Arg Gly
             245           250           255
Arg Val Tyr Leu Gln Gly Ser Val Thr Arg Asp Leu
         260           265


        <210> 522
        <211> 196
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 522

```
Glu Arg His Tyr Phe Met Ala Asp Gly Glu Val His Lys Leu Arg Asp
1               5                   10                  15
Ile Ile Glu Lys Glu Leu Leu Glu Ala Arg Arg Val Phe Phe Ser Glu
            20                  25                  30
Pro Val Thr Glu Lys Ser Ala Ser Asp Ala Ile Lys Lys Leu Trp Tyr
            35                  40                  45
Leu Glu Leu Lys Asp Pro Gly Lys Pro Ile Val Phe Val Ile Asn Ser
    50                  55                  60
Pro Gly Gly Ser Val Asp Ala Gly Phe Ala Val Trp Asp Gln Ile Lys
65                  70                  75                  80
Met Leu Thr Ser Pro Val Thr Thr Val Val Thr Gly Leu Ala Ala Ser
                85                  90                  95
Met Gly Ser Val Leu Ser Leu Cys Ala Ala Pro Gly Arg Arg Phe Ala
            100                 105                 110
Thr Pro His Ser Arg Ile Met Ile His Gln Pro Ser Ile Gly Gly Pro
        115                 120                 125
Ile Thr Gly Gln Ala Thr Asp Leu Asp Ile His Ala Arg Glu Ile Leu
        130                 135                 140
Lys Thr Lys Ala Arg Ile Ile Asp Val Tyr Val Glu Ala Thr Asn Gln
145                 150                 155                 160
Pro Arg Asp Ile Ile Glu Lys Ala Ile Asp Arg Asp Met Trp Met Thr
                165                 170                 175
Ala Asn Glu Ala Lys Asp Phe Gly Leu Leu Asp Gly Ile Leu Phe Ser
            180                 185                 190
Phe Asn Asp Leu
        195
```

<210> 523
<211> 521
<212> PRT
<213> Chlamydia pneumoniae

<400> 523

```
Lys Ser Leu Leu Lys Val Phe Glu Lys Phe Lys Lys Phe Ala Ile Val
1               5                   10                  15
Glu Ile Phe Thr Lys Val Val Ala Val Val Ser Leu Leu His Lys Phe
            20                  25                  30
Leu Glu Asn Ala Ser Gly Lys Lys Gly Gln Ser Leu Ala Ser Thr Ala
        35                  40                  45
Tyr Leu Ala Ala Leu Asp His Leu Leu Asn Ala Phe Pro Ser Ile Gly
    50                  55                  60
Glu Arg Ile Ile Asp Glu Leu Lys Ser Gln Arg Ser His Leu Lys Met
65                  70                  75                  80
Ile Ala Ser Glu Asn Tyr Ser Ser Leu Ser Val Gln Leu Ala Met Gly
                85                  90                  95
Asn Leu Leu Thr Asp Lys Tyr Cys Glu Gly Ser Pro Phe Lys Arg Phe
            100                 105                 110
Tyr Ser Cys Cys Glu Asn Val Asp Ala Ile Glu Trp Glu Cys Val Glu
        115                 120                 125
Thr Ala Lys Glu Leu Phe Ala Ala Asp Cys Ala Cys Val Gln Pro His
        130                 135                 140
Ser Gly Ala Asp Ala Asn Leu Leu Ala Val Met Ala Ile Leu Thr His
145                 150                 155                 160
Lys Val Gln Gly Pro Ala Val Ser Lys Leu Gly Tyr Lys Thr Val Asn
                165                 170                 175
Glu Leu Thr Glu Glu Glu Tyr Thr Leu Leu Lys Ala Glu Met Ser Ser
            180                 185                 190
Cys Val Cys Leu Gly Pro Ser Leu Asn Ser Gly Gly His Leu Thr His
        195                 200                 205
```

789

```
Gly Asn Val Arg Leu Asn Val Met Ser Lys Leu Met Arg Cys Phe Pro
210             215             220
Tyr Asp Val Asn Pro Asp Thr Glu Cys Phe Asp Tyr Ala Glu Ile Ser
225             230             235             240
Arg Leu Ala Lys Glu Tyr Lys Pro Lys Val Leu Ile Ala Gly Tyr Ser
            245             250             255
Ser Tyr Ser Arg Arg Leu Asn Phe Ala Val Leu Lys Gln Ile Ala Glu
            260             265             270
Asp Cys Gly Ser Val Leu Trp Val Asp Met Ala His Phe Ala Gly Leu
            275             280             285
Val Ala Gly Gly Val Phe Val Asp Glu Glu Asn Pro Ile Pro Tyr Ala
290             295             300
Asp Ile Val Thr Thr Thr Thr His Lys Thr Leu Arg Gly Pro Arg Gly
305             310             315             320
Gly Leu Val Leu Ala Thr Arg Glu Tyr Glu Ser Thr Leu Asn Lys Ala
            325             330             335
Cys Pro Leu Met Met Gly Gly Pro Leu Pro His Val Ile Ala Ala Lys
            340             345             350
Thr Val Ala Leu Lys Glu Ala Leu Ser Val Asp Phe Lys Lys Tyr Ala
            355             360             365
His Gln Val Val Asn Asn Ala Arg Arg Leu Ala Glu Arg Phe Leu Ser
370             375             380
His Gly Leu Arg Leu Leu Thr Gly Gly Thr Asp Asn His Met Met Val
385             390             395             400
Ile Asp Leu Gly Ser Leu Gly Ile Ser Gly Lys Ile Ala Glu Asp Ile
            405             410             415
Leu Ser Ser Val Gly Ile Ala Val Asn Arg Asn Ser Leu Pro Ser Asp
            420             425             430
Ala Ile Gly Lys Trp Asp Thr Ser Gly Ile Arg Leu Gly Thr Pro Ala
            435             440             445
Leu Thr Thr Leu Gly Met Gly Ile Asp Glu Met Glu Glu Val Ala Asp
            450             455             460
Ile Ile Val Lys Val Leu Arg Asn Ile Arg Leu Ser Cys His Val Glu
465             470             475             480
Gly Ser Ser Lys Lys Asn Lys Gly Glu Leu Pro Glu Ala Ile Ala Gln
            485             490             495
Glu Ala Arg Asp Arg Val Arg Asn Leu Leu Leu Arg Phe Pro Leu Tyr
            500             505             510
Pro Glu Ile Asp Leu Glu Ala Leu Val
515             520

        <210> 524
        <211> 277
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 524
Arg Glu Pro Leu Ser Pro Glu Lys Thr Ser Leu Ala Phe Lys Val Lys
1           5               10              15
Asn Val Asn Gln Arg Met Ile Lys Lys Asn Gln Gly Lys Lys Lys Asn
            20              25              30
Tyr Phe Gln Tyr Ile Pro Leu Lys Val Gln Lys Leu Arg Gln Pro Ser
            35              40              45
Phe Tyr Pro Lys Arg Leu Met Thr Leu Tyr Leu Gly Leu Asn Gln Lys
            50              55              60
Thr Ala Arg Lys Tyr Gln Ala His Tyr Leu Pro Ile Leu Thr Leu Phe
65              70              75              80
Pro Tyr Ala Lys Ser Thr Pro Gln Asn Lys Arg Ala Leu Gln Phe Leu
            85              90              95
Pro Gln Ala Thr His Val Ile Leu Thr Ser Pro Ser Ser Thr His Leu
            100             105             110
```

790

```
Phe Leu Ser Arg Met Thr Ser Leu Leu Ser Lys Ala Thr Leu Lys Thr
        115                 120             125
Lys Thr Tyr Leu Cys Ile Gly Glu Ser Thr Lys Glu Arg Leu Leu Ser
        130             135             140
Phe Leu Gly Gln Val Lys Tyr Val Val Ala Thr Gln Glu Ile Ala Glu
145                 150                 155                 160
Gly Ile Phe Pro Leu Leu Gln Ala Leu Pro Ser Ser Ala Arg Ile Leu
                165             170             175
Tyr Pro His Ser Ser Leu Ala Arg Pro Val Ile Arg Glu Phe Leu Tyr
            180             185             190
Asn Arg Phe Thr Phe Phe Ser Tyr Pro His Tyr Thr Val Lys Pro Arg
        195             200             205
Lys Leu Lys Lys Asn Ile Leu Ser Lys Tyr Lys Lys Ile Ile Phe Thr
        210             215             220
Ser Pro Ser Thr Val Arg Ala Phe Ala Lys Ile Phe Pro Arg Phe Pro
225             230             235             240
Glu Lys Thr Tyr Trp Cys Gln Gly Arg Met Thr Leu Gln Glu Phe Gln
                245             250             255
Lys Phe Ser Ser Gln Lys Gln Val Ser Leu Leu Glu Thr Leu Gly Lys
            260             265             270
Ser Arg Thr Ser Pro
        275


        <210> 525
        <211> 111
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 525
Phe Met Ala Ser Ser Ala Thr Pro Gly Phe Asp Gly Thr Ala Pro Ser
1               5               10              15
Leu Phe Pro Pro Ala Thr Arg Pro Arg Tyr Asn Phe Lys Leu Ala Leu
        20              25              30
Phe Val Thr Ile Ala Ile Ala Leu Val Trp Ile Ala Leu Ile Ala Thr
        35              40              45
Thr Ile Ala Ile Gly Leu Cys Ile His Pro Leu Cys Ser Phe Ile Phe
        50              55              60
Leu Thr Ala Ile Pro Leu Tyr Phe Ile Ser Arg Tyr Ile Cys Ser His
65              70              75              80
Tyr Ala Arg Asn Val Tyr Ile Ala Leu Asp Val Val Pro Asp His Ser
                85              90              95
Lys Leu Gln Asp Met Arg Ser His Ser Pro Ile Phe Ser Asp Arg
                100             105             110


        <210> 526
        <211> 367
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 526
Lys Val Phe Tyr Lys Lys Asn Val Met Ser Gly Pro Ser Arg Thr Glu
1               5               10              15
Ser Ser Gln Val Ser Val Leu Ser Tyr Val Pro Arg Asp Lys Glu Ile
            20              25              30
Ala Pro Lys Lys Gln Phe Thr Ile Ala Lys Ile Ser Thr Leu Ala Ile
        35              40              45
Leu Ala Ser Leu Ala Leu Gly Ala Leu Val Ala Gly Ile Ser Leu Thr
        50              55              60
Ile Val Leu Gly Asn Pro Val Phe Leu Ala Leu Leu Ile Thr Thr Ala
65              70              75              80
```

791

```
Leu Phe Ser Val Val Thr Phe Leu Val Tyr His Gln Met Thr Ser Lys
                85                      90                      95
Val Ser Ser Asn Trp Gln Lys Val Leu Glu Gln Asn Phe Lys Pro Leu
            100                     105                 110
Gly Lys Ala Trp Gln Glu Lys Asn Val Asp Cys Tyr Ser Asn Glu Met
            115                 120                 125
Gln Phe Tyr Asn Asn His Leu Asn Pro Lys Phe Lys Val Ala Ile Gln
        130                 135                 140
Thr Asp Ala Ser Gln Pro Phe Gln Pro Thr Phe Leu Thr Gly Leu Arg
145                 150                 155                     160
Val Ile Glu Lys Asn Gln Ser Thr Gly Ile Ile Phe Asn Pro Val Gly
                165                 170                 175
Pro Thr Asn Leu Ile Asp Asn Thr Ala Thr Asn Leu Ser Thr Ile Leu
            180                 185                 190
Tyr Ser Thr Leu Lys Asp Lys Ser Val Trp Asp Thr Cys Lys Gln Arg
        195                 200                 205
Glu Gly Gly Pro Ala Lys Gly Glu Asp Pro Phe Ser Pro Thr Glu Val
    210                 215                 220
Arg Val Val Lys Leu Pro Asn Glu Ala Leu Asp Gln Thr Phe Asn Leu
225                 230                 235                 240
Asn Leu Ser Ser Ala Glu Lys Lys Ser Ile Leu Pro Thr Phe Leu Gly
            245                 250                 255
His Val Cys Gly Pro Lys Ser Glu Glu Leu Pro Asn Gln Gln Glu Tyr
            260                 265                 270
Tyr Arg Gln Ala Leu Leu Ala Tyr Glu Asn Cys Leu Lys Ala Ala Ile
        275                 280                 285
Glu Ser His Ala Ala Ile Val Ala Leu Pro Leu Phe Thr Ser Val Tyr
    290                 295                 300
Glu Val Pro Pro Glu Glu Ile Leu Pro Lys Glu Gly Thr Phe Tyr Trp
305                 310                 315                 320
Asp Asn Gln Thr Gln Ala Phe Cys Lys Arg Ala Leu Leu Asp Ala Ile
            325                 330                 335
Gln Asn Thr Ala Leu Arg Tyr Pro Gln Arg Ser Leu Leu Val Ile Leu
        340                 345                 350
Gln Asp Pro Phe Asn Thr Ile Glu Ser Gln Ser Arg Ser Glu Glu
    355                 360                 365

        <210> 527
        <211> 258
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 527
Gly Ile Ile Phe Met His Asp Ala Leu Leu Ser Ile Leu Ala Ile Gln
1               5                   10                      15
Glu Leu Asp Ile Lys Met Ile Arg Leu Met Arg Val Lys Lys Glu His
            20                  25                  30
Gln Lys Glu Leu Ala Lys Val Gln Ser Leu Lys Ser Asp Ile Arg Arg
        35                  40                  45
Lys Val Gln Glu Lys Glu Leu Glu Met Glu Asn Leu Lys Thr Gln Ile
    50                  55                  60
Arg Asp Gly Glu Asn Arg Ile Gln Glu Ile Ser Glu Gln Ile Asn Lys
65                  70                  75                  80
Leu Glu Asn Gln Gln Ala Ala Val Lys Lys Met Asp Glu Phe Asn Ala
                85                  90                  95
Leu Thr Gln Glu Met Thr Thr Ala Asn Lys Glu Arg Arg Ser Leu Glu
            100                 105                 110
His Gln Leu Ser Asp Leu Met Asp Lys Gln Ala Gly Gly Glu Asp Leu
        115                 120                 125
Ile Val Ser Leu Lys Glu Ser Leu Ala Ser Thr Glu Asn Ser Ser Ser
    130                 135                 140
```

792

```
Val Ile Glu Lys Glu Ile Phe Glu Ser Ile Lys Lys Ile Asn Glu Glu
145                 150                 155                 160
Gly Lys Ala Leu Leu Glu Gln Arg Thr Glu Leu Lys His Ala Thr Asn
                165                 170                 175
Pro Glu Leu Leu Ser Ile Tyr Glu Arg Leu Leu Asn Asn Lys Lys Asp
                180                 185                 190
Arg Val Val Val Pro Ile Glu Asn Arg Val Cys Ser Gly Cys His Ile
            195                 200                 205
Val Leu Thr Pro Gln His Glu Asn Leu Val Arg Lys Lys Asp Arg Leu
        210                 215                 220
Ile Phe Cys Glu His Cys Ser Arg Ile Leu Tyr Trp Gln Glu Ser Gln
225                 230                 235                 240
Val Asn Ala Gln Glu Asn Ser Thr Ala Lys Arg Arg Arg Arg Arg Ala
                245                 250                 255
Ala Val
```

<210> 528
<211> 354
<212> PRT
<213> Chlamydia pneumoniae

<400> 528
```
Val Phe Asn Leu Ile Glu Lys Ser Phe Gly Val Cys Tyr Asp Gly Leu
1                 5                 10                  15
Lys Cys Ser Gln Ser Lys Glu Asn Arg Met Pro Ser Pro Met Ile Ser
            20                  25                  30
Thr Asp Val Cys Gln Asp Ile Leu Gly Lys Gln Lys Glu Ala Val Asp
        35                  40                  45
Phe Phe Phe Gln Ala Phe Gln Pro Lys Glu Ala Met Gln Leu Ala Glu
    50                  55                  60
Lys Ile Leu Gly His Ser Gly Trp Val Phe Phe Ser Gly Val Gly Lys
65                  70                  75                  80
Ser Gly Cys Val Ala Arg Lys Leu Val Ala Thr Leu Gln Ser Leu Ser
                85                  .   90                  95
Glu Arg Ala Leu Phe Phe Ser Pro Val Asp Leu Leu His Gly Asp Leu
            100                 105                 110
Gly Leu Val Ser Pro Gly Asp Ile Val Cys Leu Phe Ser Lys Ser Gly
        115                 120                 125
Glu Thr Gln Glu Leu Leu Asp Thr Val Pro His Leu Lys Ser Arg Arg
        130                 135                 140
Ala Ile Leu Val Ala Ile Thr Ser Met Pro Tyr Ser Asn Leu Ala Ala
145                 150                 155                 160
Leu Ser Asp Leu Val Val Ile Leu Pro Ser Val Ala Glu Leu Asp Pro
                165                 170                 175
Phe Asn Leu Ile Pro Thr Asn Ser Thr Thr Cys Gln Met Ile Phe Gly
            180                 185                 190
Asp Phe Leu Ala Met Leu Leu Phe His Ser Arg Gly Val Ser Leu Ser
            195                 200                 205
Thr Tyr Gly Lys Asn His Pro Ser Gly Gln Val Gly Met Lys Ala Asn
        210                 215                 220
Gly Lys Val Lys Asp Phe Met Phe Pro Lys Thr Glu Val Pro Phe Cys
225                 230                 235                 240
His Leu Gly Asp Lys Val Ser Phe Ser Leu Glu Val Phe Ser Ala Tyr
                245                 250                 255
Gly Cys Gly Cys Val Cys Ile Val Asp Pro Gln Phe Arg Leu Met Gly
            260                 265                 270
Ile Phe Thr Asp Gly Asp Leu Arg Arg Ser Leu Ala Ser Tyr Gly Gly
        275                 280                 285
Glu Val Leu Ser Leu Ser Leu Glu Lys Val Met Thr Ala Asn Pro Arg
        290                 295                 300
```
```

```
Cys Ile Thr Glu Asp Ser Asp Ile Ala Ile Ala Leu Gln Leu Met Glu
305             310             315             320
Ser Ser Ser Pro Val Ala Val Leu Pro Val Leu Asp Asn Glu Glu Asn
                325             330             335
Arg His Val Thr Gly Leu Leu His Met His Thr Leu Ala Lys Ala Gly
            340             345             350
Leu Leu


        <210> 529
        <211> 395
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 529
Arg Tyr Met Ile Phe Glu Phe Arg Phe Pro Lys Ile Gly Glu Thr Ser
1               5               10              15
Ser Gly Gly Ser Ile Val Arg Trp Leu Lys Asn Leu Gly Asp His Val
            20              25              30
Ala Arg Asp Glu Pro Leu Ile Glu Val Ser Thr Asp Lys Ile Ala Thr
            35              40              45
Glu Leu Pro Ser Pro Lys Ala Gly Arg Leu Val Arg Phe Cys Val Asn
    50              55              60
Glu Gly Asp Glu Val Ala Ser Gly Asp Val Leu Gly Leu Ile Glu Leu
65              70              75              80
Glu Glu Ile Ser Glu Ala Asp Asp Glu Ser Thr Ser Cys Pro Pro Thr
                85              90              95
Ser Cys Glu Thr Lys Ser Glu Ala Gly Ser Ser Ser Ser Ser Val Trp
            100             105             110
Phe Ser Pro Ala Val Leu Ser Leu Ala Gln Arg Glu Gly Ile Gly Leu
    115             120             125
Asp Asn Leu Gln Lys Ile Ala Gly Thr Gly Lys Gly Gly Arg Val Thr
    130             135             140
Arg Gln Asp Leu Glu Ala Tyr Ile Ser Glu Ser Gln Gln Val Ser Ile
145             150             155             160
Pro Glu Ile Phe Gln Gly Glu Val Asn Arg Ile Pro Met Ser Pro Leu
                165             170             175
Arg Arg Ala Ile Ala Ser Ser Leu Ser Lys Ser Ser Asp Glu Val Pro
            180             185             190
His Ala Ser Leu Val Val Asp Val Asp Val Thr Asp Leu Met Asn Leu
            195             200             205
Ile Ser Gly Glu Arg Gln Arg Phe Leu Asp Thr His Gly Val Lys Leu
    210             215             220
Thr Ile Thr Ser Phe Ile Val Gln Cys Leu Ala Gln Thr Leu Arg Gln
225             230             235             240
Phe Pro Leu Leu Asn Gly Ser Leu Asp Gly Thr Thr Ile Val Met Lys
                245             250             255
Lys Ser Val Asn Val Gly Val Ala Val Asn Leu Asn Lys Glu Gly Val
            260             265             270
Val Val Pro Val Ile His Asn Cys Gln Asp Arg Gly Leu Val Ser Ile
    275             280             285
Ala Lys Ala Leu Ala Asp Leu Ser Ser Arg Ala Arg Leu Asn Lys Leu
    290             295             300
Asp Pro Ser Glu Val Gln Asp Gly Ser Val Thr Val Thr Asn Phe Gly
305             310             315             320
Met Thr Gly Ala Leu Ile Gly Met Pro Ile Ile Arg Tyr Pro Glu Val
                325             330             335
Ala Ile Leu Gly Ile Gly Thr Ile Gln Lys Arg Val Val Val Arg Asp
            340             345             350
Asp Asp Ser Leu Ala Ile Arg Lys Met Val Tyr Val Thr Leu Thr Phe
            355             360             365
```

794

Asp His Arg Val Leu Asp Gly Ile Tyr Gly Ser Glu Phe Leu Thr Ser
370   375   380
Leu Lys Asn Arg Leu Glu Ser Val Thr Met Gly
385   390   395

<210> 530
<211> 415
<212> PRT
<213> Chlamydia pneumoniae

<400> 530
Leu Met Lys Leu Trp Met Lys Ile Phe Ile Gly Leu Phe Val Gly Val
1   5   10   15
Thr Leu Gly Leu Val Leu Glu Asp Lys Ala Ile Phe Phe Lys Pro Ile
            20   25   30
Gly Asp Ile Phe Leu Asn Leu Leu Ser Met Val Val Tyr Pro Leu Val
        35   40   45
Phe Cys Ser Met Val Leu Gly Ile Ala Ser Ile Ser Asp Met Lys Lys
    50   55   60
Leu Gly Arg Ile Gly Ile Lys Ser Val Gly Leu Tyr Leu Gly Thr Thr
65   70   75   80
Ala Leu Ala Ile Val Ile Gly Leu Cys Phe Ala Trp Ile Phe Ser Pro
            85   90   95
Gly Asn Gly Cys Asp Phe Ala Gln Ala Gln Ser Met Asp Ser Ala Val
            100   105   110
Thr Val Ile Asp Ser Asn Lys Thr Ala Ala Tyr Phe Leu Ser Ile Ile
        115   120   125
Ala Gln Val Phe Pro Ser Asn Pro Val Arg Ser Phe Ala Glu Gly Asn
    130   135   140
Ile Leu Gln Ile Ile Ile Phe Ala Ile Phe Leu Gly Ile Ala Leu Arg
145   150   155   160
Leu Ser Gly Glu Arg Gly Arg Pro Val Glu Arg Phe Ile Asp Gly Phe
                165   170   175
Ser Glu Ile Met Leu Arg Met Val Asn Met Ile Met Ser Phe Ala Pro
            180   185   190
Tyr Gly Val Gly Ala Ser Met Ala Trp Ile Ser Gly Asn His Gly Leu
        195   200   205
Gly Val Leu Trp Gln Leu Gly Lys Phe Ile Ile Ala Tyr Tyr Leu Ala
    210   215   220
Cys Leu Phe His Ala Thr Leu Val Phe Gly Gly Leu Val Arg Phe Gly
225   230   235   240
Cys Lys Met Ser Phe Ser Lys Phe Leu Ser Ser Met Met Asp Ala Ile
                245   250   255
Ser Cys Ala Val Ser Thr Ala Ser Ser Ser Ala Thr Leu Pro Val Thr
            260   265   270
Met Arg Cys Val Ser Lys Asn Leu Gly Val Ser Ala Glu Val Ser Gly
            275   280   285
Phe Val Leu Pro Leu Gly Ala Thr Val Asn Met Asn Gly Thr Ala Ile
    290   295   300
Phe Gln Gly Met Ala Ala Val Phe Ile Ala Gln Ala Tyr Asn Cys Pro
305   310   315   320
Leu Ser Leu Ser Ser Leu Leu Leu Leu Val Val Thr Ala Thr Phe Ser
                325   330   335
Ala Val Gly Ser Ala Gly Val Pro Gly Gly Gly Met Ile Thr Leu Gly
            340   345   350
Ser Val Leu Ala Ser Val Gly Leu Pro Ile Gln Gly Ile Ala Ile Leu
    355   360   365
Ala Gly Ile Asp Arg Leu Arg Asp Ile Val Gly Thr Pro Met Asn Ile
    370   375   380
Leu Gly Asp Ala Val Val Ala Thr Tyr Val Ala Ser Gly Glu Gly Glu
385   390   395   400

795

```
Leu Ser Pro Tyr Glu Ser Ile Lys Gln Glu Ser Val Glu Thr Thr
            405                 410                 415


        <210> 531
        <211> 378
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 531
Phe Ser Cys Lys Glu Ile Arg Ala Phe Lys Arg Gly Thr Met Lys Lys
1             5                 10                15
Arg Phe Pro Ser Thr Leu Phe Leu Phe Tyr Arg Arg Val Thr Ile Ala
            20                25                30
Ile Ser Leu Glu Gly Ile Leu Gly Trp Gly Trp Leu Gly Ser Leu Leu
            35                40                45
Ser Lys Val Phe Ala Phe Leu Val Ala Cys Trp Asn Arg Phe Ser Trp
            50                55                60
Ser Thr Pro Tyr Arg Ala Arg Ser Thr Val Ile Ser Val Gly Asn Ile
65                70                75                80
Val Val Gly Gly Ala Gly Lys Thr Pro Thr Val Leu Trp Leu Ala Glu
                85                90                95
Ala Leu Arg Leu Arg Gly Tyr Ser Cys Gly Val Leu Ser Arg Gly Tyr
            100               105               110
Lys Ser Gln Ser Ser Arg Gln Lys Lys Leu Thr Val Val Asp Ser Lys
            115               120               125
Val His Ser Ala Ser Tyr Val Gly Asp Glu Pro Leu Leu Met Ala Glu
            130               135               140
Lys Leu Pro Glu Gly Ser Val Trp Val His Lys Asp Arg Arg Ile Ser
145               150               155               160
Ala Ala Arg Ala Ala Glu Lys Phe Gly Ile Leu Leu Leu Asp Asp Gly
                165               170               175
Leu Gln Tyr Arg Lys Leu His Lys Asp Val Glu Ile Ala Val Val Asn
            180               185               190
Gly Gln Asp Pro Leu Gly Gly Arg Ala Phe Phe Pro Lys Gly Arg Leu
            195               200               205
Arg Asp Phe Pro Leu Arg Leu Lys Thr Val Asp Ala Ile Ile Val Asn
            210               215               220
Gly Gly Gly Lys Glu Ala Gly Thr Val Val Lys Arg Val Ser Asn Ala
225               230               235               240
Pro Gln Ile Phe Val Lys Pro Thr Ile Ala Ser Val Val Trp Thr His
                245               250               255
Asn Gly Glu Arg Ile Pro Lys Glu Ala Leu Arg Glu Leu Arg Val Gly
            260               265               270
Val Phe Cys Gly Leu Gly Phe Pro Gln Gly Phe Leu Asn Met Leu Arg
            275               280               285
Glu Glu Gly Ile His Ile Leu Gly Lys Tyr Leu Leu Pro Asp His Ala
            290               295               300
Ala Ile Thr Lys Lys Glu Leu Asn Tyr Phe Cys Gln Gln Met Ala Met
305               310               315               320
Arg Gln Gly Gln Gly Leu Leu Cys Thr Glu Lys Asp Ser Val Lys Leu
                325               330               335
Pro Arg Leu Ser Gly Glu Val Ser Leu Leu Pro Ile Ala Lys Val Glu
            340               345               350
Met Arg Leu Ser Val Asn Gln Asp Asp Thr Leu Ser Leu Leu Asn Met
            355               360               365
Ile Glu Gln Ile His Lys Asn Arg Gly Asn
370               375
```

<210> 532
<211> 288
<212> PRT
<213> Chlamydia pneumoniae

<400> 532
```
Ser Val Val Leu Trp Gly Lys Phe Leu Trp Arg Arg Cys Gly Ser Leu
1               5                   10                  15
Ala Phe Trp Glu Phe Cys Ser Met Asp Cys Ile Gly Lys His Asn Pro
            20                  25                  30
Leu Val Lys Glu Ala Leu Ala Leu Lys Arg Ser Arg Cys Arg Lys Ser
        35                  40                  45
Ser Trp Phe Leu Val Glu Gly Ala Arg Glu Ile Gln Lys Ala Leu Arg
    50                  55                  60
Thr Gly Tyr Leu Cys Gln His Val Phe Cys Ser Thr His Leu Ser Glu
65                  70                  75                  80
Lys Glu Lys Glu Phe Leu Tyr Glu Leu Lys Arg Asn Ser Thr Lys Ile
                85                  90                  95
Leu Tyr Cys Leu Asp Ser Thr Leu Ala Gln Leu Ser Phe Lys Glu His
                100                 105                 110
His Asp Ser Phe Val Ala Val Ile Gln Lys Arg Val Trp Asn Lys Glu
            115                 120                 125
Asp Phe Leu Ile Gln Arg Lys Asn Ala Gln Pro Phe Tyr Leu Ile Ile
        130                 135                 140
Glu Gln Val Glu Lys Pro Gly Asn Val Gly Ala Ile Leu Arg Ile Ala
145                 150                 155                 160
Asp Gly Ala Gly Val Asp Gly Val Ile Leu Cys Asn Pro Ile Val Asp
                165                 170                 175
Leu Tyr Asn Pro Asn Val Val Arg Ser Ser Leu Gly Ala Val Phe Ser
                180                 185                 190
Leu Pro Ile Leu Ser Ile Ser Arg Glu Glu Gly Lys Glu Leu Phe Lys
                195                 200                 205
Gln Glu Gly Trp Thr Val Phe Val Thr Ser Pro Arg Ala Glu Thr Met
            210                 215                 220
Tyr Phe Ser Lys Asn Tyr Leu Gly Pro Thr Ala Leu Val Phe Gly Ser
225                 230                 235                 240
Glu Lys Asp Gly Leu Thr Glu Asp Trp Phe Ser Glu Asp Phe Ser Glu
                245                 250                 255
Ile Ala Leu Pro Met Leu Gly Glu Ser Asp Ser Leu Asn Leu Ala Thr
                260                 265                 270
Ser Val Ala Ala Val Ala Tyr Glu Val Val Arg Gln Arg Trp Val Asn
275                 280                 285
```

<210> 533
<211> 318
<212> PRT
<213> Chlamydia pneumoniae

<400> 533
```
Asp Ser Ser Lys Asp Asp Phe Arg Lys Glu Lys Gly Arg Arg Lys Ser
1               5                   10                  15
Gln Tyr Arg Asp Arg Tyr Val Asn Lys Asp Thr Gly Arg His Ser Lys
            20                  25                  30
Thr Tyr Phe Ser Leu Ile Arg Glu Arg Leu Val Met Asp Tyr Lys Leu
        35                  40                  45
Leu Asp Ser Gly Asp Gly Asn Lys Leu Glu Cys Phe Gly Pro Val Thr
    50                  55                  60
Leu Ile Arg Pro Ser Ser Ile Ala Val Trp Pro Lys Ser Arg Pro Glu
65                  70                  75                  80
Leu Trp Ser Gln Ala Gln Leu Gln Tyr Val Arg Glu Gly Glu Arg Gly
                85                  90                  95
```

```
Ala Trp Lys Asn Phe Lys Arg Leu Pro Glu Glu Trp Glu Val Ala Phe
            100             105             110
Ser Asp Val Arg Cys Leu Leu Lys Arg Thr Pro Phe Gly His Leu Gly
            115             120             125
Val Phe Pro Glu His Met Gly Phe Trp Pro Ala Leu Lys Gln Ala Ile
    130             135             140
Glu Lys His Lys Glu Arg Gln Val Leu Asn Leu Phe Ala Tyr Thr Gly
145             150             155             160
Ala Gly Ser Ile Phe Ala Ala Lys Cys Gly Ala Arg Val Thr His Val
            165             170             175
Asp Ala Ser Gln Ala Ala Val Arg Trp Ala Gln Arg Asn Val Glu Lys
            180             185             190
Asn Ala Phe Pro Glu Arg Arg Ile Phe Trp Val Ile Glu Asp Val Ile
    195             200             205
Ser Phe Leu Lys Lys Glu Ile Arg Arg Asn Lys Lys Tyr Gln Val Ile
    210             215             220
Leu Leu Asp Pro Pro Ser Tyr Gly Arg Gly Pro Asp Gly Glu Val Phe
225             230             235             240
Lys Ile Asp Lys Asp Leu Phe Pro Leu Leu Ser Leu Cys Ser Lys Leu
            245             250             255
Leu Ala Asp Asp Ala Ser Tyr Phe Leu Leu Thr Ser His Thr Pro Gly
            260             265             270
His Thr Pro Glu Phe Leu Arg Ala Ile Ala Arg Arg Ser Val Pro Thr
            275             280             285
Leu Val Ser Glu Ala Trp Ser Cys Gly Glu Ser Phe Cys Gly Glu Gly
    290             295             300
Val Gly Ala Leu Pro Ser Gly Ser Phe Val Gln Trp Ile Ala
305             310             315
```

        <210> 534
        <211> 214
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 534

```
Glu Ser Phe Cys Cys Lys Asp Ser Val Val Lys Trp Gly Gly Met Phe
 1           5               10              15
Ser Gly Ile Ile Gln Glu Leu Gly Glu Val Cys Phe Phe Glu Ala Gln
            20              25              30
Gly Asn Gly Leu Ser Leu Gly Ile Lys Ser Thr Pro Leu Phe Val Thr
            35              40              45
Pro Leu Val Thr Gly Asp Ser Val Ala Val Asp Gly Val Cys Leu Thr
    50              55              60
Leu Thr Ser Cys Asn Glu Ser Lys Ile Phe Phe Asp Val Ile Pro Glu
65              70              75              80
Thr Leu Ala Cys Thr Thr Leu Gly Glu Lys Arg Cys Ser Asp Gln Val
            85              90              95
Asn Leu Glu Ala Ala Leu Lys Met Gly Asp Ser Ile Gly Gly His Leu
            100             105             110
Leu Ser Gly His Val Phe Gly Thr Ala Glu Ile Phe Leu Ile Lys Glu
            115             120             125
Asn Arg Tyr Tyr Phe Arg Gly Ser Lys Glu Leu Ser Gln Tyr Leu Phe
            130             135             140
Glu Lys Gly Phe Ile Ala Ile Asp Gly Ile Ser Leu Thr Leu Val Ser
145             150             155             160
Val Asp Ser Asp Thr Phe Ser Val Gly Leu Ile Pro Glu Thr Leu Gln
            165             170             175
Arg Thr Thr Leu Gly Lys Lys Arg Glu Gly Glu Arg Val Asn Ile Glu
            180             185             190
Ile Asp Met Ser Thr Lys Ile Gln Val Asp Thr Val Lys Arg Ile Leu
    195             200             205
```

Ala Ser Ser Gly Lys Asp
   210

       <210> 535
       <211> 156
       <212> PRT
       <213> Chlamydia pneumoniae

       <400> 535
Glu Val Ala Pro Met Gln Cys Pro Phe Cys Asn His Gly Glu Leu Lys
1   5   10   15
Val Ile Asp Ser Arg Asn Ala Pro Glu Ala Asn Ala Ile Lys Arg Arg
                20   25   30
Arg Glu Cys Leu Lys Cys Ser Gln Arg Phe Thr Thr Phe Glu Thr Val
            35   40   45
Glu Leu Thr Leu Gln Val Leu Lys Arg Asp Gly Arg Tyr Glu Asn Phe
        50   55   60
Gln Glu Ser Lys Leu Ile His Gly Leu Asn Ala Ala Ser Ser His Thr
65   70   75   80
Arg Ile Gly Gln Asp Gln Val His Ala Ile Ala Ser Asn Val Lys Ser
                85   90   95
Glu Leu Leu Gly Lys Gln Asn Arg Glu Ile Ser Thr Lys Glu Ile Gly
            100   105   110
Glu Leu Val Met Lys Tyr Leu Lys Lys Ala Asp Met Ile Ala Tyr Ile
        115   120   125
Arg Phe Ala Cys Val Tyr Arg Arg Phe Lys Asp Val Gly Glu Leu Met
    130   135   140
Glu Val Leu Leu Ser Ala Thr Pro Asp Met Glu Lys
145   150   155

       <210> 536
       <211> 132
       <212> PRT
       <213> Chlamydia pneumoniae

       <400> 536
Leu Asn Phe Ile Arg Ser Lys Val Val Pro Leu Ser Asp Asp Glu Ile
1   5   10   15
Glu Gln Phe Lys Lys Arg Leu Leu Glu Met Lys Ala Lys Leu Ser His
                20   25   30
Thr Leu Glu Gly Asn Ala Gln Glu Val Lys Lys Pro Asn Glu Ala Thr
            35   40   45
Gly Tyr Ser Gln His Gln Ala Asp Gln Gly Thr Asp Thr Phe Asp Arg
        50   55   60
Thr Ile Ser Leu Glu Val Thr Thr Lys Glu Tyr Glu Leu Leu Arg Gln
65   70   75   80
Ile Asn Arg Ala Leu Glu Lys Ile Asn Glu Ser Ser Tyr Gly Ile Cys
                85   90   95
Asp Val Ser Gly Glu Glu Ile Pro Leu Ala Arg Leu Ile Ala Ile Pro
            100   105   110
Tyr Ala Thr Met Thr Val Lys Ala Gln Glu Gln Phe Glu Lys Gly Leu
        115   120   125
Leu Ser Gly Asn
    130

       <210> 537
       <211> 178
       <212> PRT
       <213> Chlamydia pneumoniae

<400> 537

```
Lys Arg Thr Pro Ile Trp Lys Leu Ser Ser Met Ala Thr Arg Phe Arg
1               5                   10                  15
Ser Thr Leu Leu Val Ile Thr Leu Phe Val Leu Ile Asp Trp Val Thr
            20                  25                  30
Lys Leu Val Val Leu Leu Gln Tyr Lys Asp Leu Gln Ile Leu Thr His
        35                  40                  45
Pro Thr Leu Tyr Thr His Ser Trp Gly Arg Phe Ser Phe Ser Ile Ala
    50                  55                  60
Pro Val Phe Asn Glu Gly Ala Ala Phe Gly Leu Phe Ser Asn Tyr Lys
65                  70                  75                  80
Tyr Phe Leu Phe Leu Leu Arg Ile Phe Val Ile Leu Gly Leu Leu Ala
            85                  90                  95
Tyr Leu Phe Phe Lys Lys Lys Ser Ile Gln Ser Thr Thr Gln Thr Ala
            100                 105                 110
Leu Val Leu Leu Cys Ala Gly Ala Ile Gly Asn Val Gly Asp Ile Ile
            115                 120                 125
Phe Tyr Gly His Ile Val Asp Phe Ile Ser Phe Asn Tyr Lys Gln Trp
    130                 135                 140
Ala Phe Pro Thr Phe Asn Val Ala Asp Val Leu Ile Ser Leu Gly Thr
145                 150                 155                 160
Leu Leu Leu Val Tyr Lys Phe Tyr Phe Pro Thr Lys Gln Thr Glu Lys
                165                 170                 175
Lys Arg
```

<210> 538
<211> 464
<212> PRT
<213> Chlamydia pneumoniae

<400> 538

```
Tyr Arg Ser Leu Gln Glu Lys Leu Arg Tyr Phe Phe Lys Thr Val Met
1               5                   10                  15
Asn Arg Leu Leu Ser Leu Leu Ser Val Phe Asp Asp Phe Phe Trp Ser
            20                  25                  30
Tyr Val Ala Phe Ile Leu Ile Ile Val Leu Gly Val Ser Phe Ser Trp
            35                  40                  45
Lys Ser Arg Phe Phe Gln Phe Thr Lys Phe Ser Gln Phe Cys Lys Leu
    50                  55                  60
Phe Arg Tyr Tyr Ser Gln Asn Pro Gln Glu Arg Glu Thr Lys Gln Gly
65                  70                  75                  80
Val His Pro Leu Lys Val Phe Phe Ala Ser Ala Gly Gly Asn Ile Gly
            85                  90                  95
Ile Gly Asn Val Val Gly Ile Val Thr Ala Ala Cys Ile Gly Gly Pro
            100                 105                 110
Gly Ala Leu Phe Trp Val Trp Ile Ala Gly Ile Phe Gly Ser Ile Val
            115                 120                 125
Lys Tyr Ser Glu Val Tyr Leu Gly Ile Lys Phe Arg Lys Leu Asp Arg
    130                 135                 140
Asp Gly Val Tyr Gln Gly Gly Pro Met Tyr Phe Leu Ile Lys Ala Phe
145                 150                 155                 160
Lys Thr Pro Val Val Ser Val Ile Val Ala Ile Leu Leu Cys Ile Tyr
                165                 170                 175
Gly Val Glu Ile Tyr Gln Phe Ser Val Ile Thr Asp Ser Leu Ala His
                180                 185                 190
Cys Trp Asn Leu Pro Lys Val Tyr Pro Met Leu Gly Leu Leu Phe Leu
            195                 200                 205
Val Phe Tyr Ala Ile Arg Gly Gly Leu Gln Arg Ile Gly Lys Ile Cys
210                 215                 220
```

```
Ser Ile Val Leu Pro Phe Phe Met Leu Leu Tyr Cys Ala Leu Ser Leu
225             230             235             240
Tyr Ile Leu Val Lys Glu Phe His Thr Leu Pro His Leu Leu Ser Thr
            245             250             255
Val Phe Ser Ser Ala Phe Lys Gly Gln Ser Ala Leu Gly Gly Phe Ala
        260             265             270
Gly Cys Thr Val Ala Thr Thr Ile His Gln Gly Ile Ser Arg Ala Ala
    275             280             285
Tyr Ser Gly Asp Ile Gly Ile Gly Phe Asp Ser Ile Ile Gln Ser Glu
    290             295             300
Ser Ser Ala Lys Asp Pro Ser Thr Gln Ala Gln Leu Ser Ile Val Gly
305             310             315             320
Ile Ala Ile Asp Asn Leu Ile Cys Thr Leu Ser Leu Leu Met Val Leu
            325             330             335
Ala Ser Gly Ser Trp Ser Leu Gly Leu Glu Asn Ala Ser Gln Val Val
        340             345             350
Glu His Thr Leu Ala Ser Tyr Phe Pro Met Val Lys Phe Phe Leu Pro
        355             360             365
Thr Phe Phe Phe Val Thr Gly Tyr Thr Thr Ile Ile Ser Tyr Phe Leu
    370             375             380
Val Gly Lys Lys Cys Ala Lys Phe Leu Tyr Gly Asn Thr Gly Ala Lys
385             390             395             400
Ile Tyr Thr Leu Tyr Gly Leu Leu Ile Leu Pro Leu Phe Cys Phe Leu
            405             410             415
Ser Gln Asn Thr Ala Leu Leu Ile Met Ser Val Ser Gly Ala Leu Leu
        420             425             430
Leu Cys Phe Asn Leu Leu Gly Val Phe Ile Leu Arg Lys Glu Val Ile
        435             440             445
Phe Pro Ala Arg Ala Ala Ser Leu Thr Glu Thr Ser Leu Ser Thr Glu
450             455             460
```

```
Leu Ile Phe Leu Leu Phe Met Asp Asn Tyr Leu Leu Gly Ser Leu Ile
1               5               10              15
Phe Cys Cys Val Leu Leu Ser Ile Gly Met Cys Thr Ile Phe Val Met
            20              25              30
Thr Ile Cys Phe Leu Arg Gln Leu Asn Lys Ile Leu Lys Asn Ile His
        35              40              45
Arg Val Thr Thr Ile Leu Asn Phe Glu Ala Lys Ile Leu Ala Pro Leu
    50              55              60
Met Leu Gly Lys Lys Leu Leu Cys Gly Trp Leu Lys Lys Arg Lys Asn
65              70              75              80
Arg Gly Ser Leu Ser Glu Asp Ile Asp Glu Leu Leu Asp Glu Lys Lys
            85              90              95
Gln Arg Ser Trp Lys Lys Asn Leu Asp Gln Gly Ile Lys Trp Cys Ala
        100             105             110
Ala Leu Val Leu Ile Trp Lys Val Phe Arg Asn Lys Asp
    115             120             125
```

<400> 540
Thr Lys Glu Leu Asn Gly Ala Gln His Trp Ser Ser Phe Gly Lys Cys
1   5   10   15
Phe Val Ile Lys Ile Lys Thr Leu Arg Asp Ile Val Met Phe Arg Asn
            20   25   30
Asn His Lys Pro Lys Lys Thr Lys Cys Lys Arg Phe Arg Trp Leu Arg
        35   40   45
Gly Val Leu Phe Gly Gly Phe Ile Ala Thr Leu Leu Thr Cys Leu Phe
    50   55   60
Thr Pro Lys Ser Gly Val Gln Leu Arg Lys Lys Ile Leu Lys Val Lys
65   70   75   80
Asn Ser Gly Ala Lys Lys Ser Arg Val Phe Phe Lys Asn Ser Lys Gln
            85   90   95
His Thr Lys Ser Phe Val Lys Gln Ala Lys Leu Leu Ala Lys Asn Ile
        100   105   110
Ser His Glu Leu Gln Asp Phe Lys Lys Gly Ile Leu Asp Asp Lys Asp
    115   120   125

<210> 541
<211> 956
<212> PRT
<213> Chlamydia pneumoniae

<400> 541
Gly Tyr Asn Leu Leu Gly Leu Arg His Met Lys Gln Met Arg Leu Trp
1   5   10   15
Gly Phe Leu Phe Leu Ser Ser Phe Cys Gln Val Ser Tyr Leu Arg Ala
            20   25   30
Asn Asp Val Leu Leu Pro Leu Ser Gly Ile His Ser Gly Glu Asp Leu
        35   40   45
Glu Leu Phe Thr Leu Arg Ser Ser Ser Pro Thr Lys Thr Thr Tyr Ser
    50   55   60
Leu Arg Lys Asp Phe Ile Val Cys Asp Phe Ala Gly Asn Ser Ile His
65   70   75   80
Lys Pro Gly Ala Ala Phe Leu Asn Leu Lys Gly Asp Leu Phe Phe Ile
            85   90   95
Asn Ser Thr Pro Leu Ala Ala Leu Thr Phe Lys Asn Ile His Leu Gly
        100   105   110
Ala Arg Gly Ala Gly Leu Phe Ser Glu Ser Asn Val Thr Phe Lys Gly
    115   120   125
Leu His Ser Leu Val Leu Glu Asn Asn Glu Ser Trp Gly Gly Val Leu
    130   135   140
Thr Thr Ser Gly Asp Leu Ser Phe Ile Asn Asn Thr Ser Val Leu Cys
145   150   155   160
Gln Asn Asn Ile Ser Tyr Gly Pro Gly Gly Ala Leu Leu Leu Gln Gly
                165   170   175
Arg Lys Ser Lys Ala Leu Phe Phe Arg Asp Asn Arg Gly Thr Ile Leu
            180   185   190
Phe Leu Lys Asn Lys Ala Val Asn Gln Asp Glu Ser His Pro Gly Tyr
        195   200   205
Gly Gly Ala Val Ser Ser Ile Ser Pro Gly Ser Pro Ile Thr Phe Ala
    210   215   220
Asp Asn Gln Glu Ile Leu Phe Gln Glu Asn Glu Gly Glu Leu Gly Gly
225   230   235   240
Ala Ile Tyr Asn Asp Gln Gly Ala Ile Thr Phe Glu Asn Asn Phe Gln
            245   250   255
Thr Thr Ser Phe Phe Ser Asn Lys Ala Ser Phe Gly Gly Ala Val Tyr
        260   265   270
Ser Arg Tyr Cys Asn Leu Tyr Ser Gln Trp Gly Asp Thr Leu Phe Thr
    275   280   285

802

```
Lys Asn Ala Ala Ala Lys Val Gly Gly Ala Ile His Ala Asp Tyr Val
    290               295               300
His Ile Arg Asp Cys Lys Gly Ser Ile Val Phe Glu Glu Asn Ser Ala
305               310               315               320
Thr Ala Gly Gly Ala Ile Ala Val Asn Ala Val Cys Asp Ile Asn Ala
            325               330               335
Gln Gly Pro Val Arg Phe Ile Asn Asn Ser Ala Leu Gly Leu Asn Gly
            340               345               350
Gly Ala Ile Tyr Met Gln Ala Thr Gly Ser Ile Leu Arg Leu His Ala
        355               360               365
Asn Gln Gly Asp Ile Glu Phe Cys Gly Asn Lys Val Arg Ser Gln Phe
    370               375               380
His Ser His Ile Asn Ser Thr Ser Asn Phe Thr Asn Asn Ala Ile Thr
385               390               395               400
Ile Gln Gly Ala Pro Arg Glu Phe Ser Leu Ser Ala Asn Glu Gly His
            405               410               415
Arg Ile Cys Phe Tyr Asp Pro Ile Ile Ser Ala Thr Glu Asn Tyr Asn
            420               425               430
Ser Leu Tyr Ile Asn His Gln Arg Leu Leu Glu Ala Gly Gly Ala Val
        435               440               445
Ile Phe Ser Gly Ala Arg Leu Ser Pro Glu His Lys Lys Glu Asn Lys
    450               455               460
Asn Lys Thr Ser Ile Ile Asn Gln Pro Val Arg Leu Cys Ser Gly Val
465               470               475               480
Leu Ser Ile Glu Gly Gly Ala Ile Leu Ala Val Arg Ser Phe Tyr Gln
            485               490               495
Glu Gly Gly Leu Leu Ala Leu Gly Pro Gly Ser Lys Leu Thr Thr Gln
            500               505               510
Gly Lys Asn Ser Glu Lys Asp Lys Ile Val Ile Thr Asn Leu Gly Phe
            515               520               525
Asn Leu Glu Asn Leu Asp Ser Ser Asp Pro Ala Glu Ile Arg Ala Thr
    530               535               540
Glu Lys Ala Ser Ile Glu Ile Ser Gly Val Pro Arg Val Tyr Gly His
545               550               555               560
Thr Glu Ser Phe Tyr Glu Asn His Glu Tyr Ala Ser Lys Pro Tyr Thr
            565               570               575
Thr Ser Ile Ile Leu Ser Ala Lys Lys Leu Val Thr Ala Pro Ser Arg
        580               585               590
Pro Glu Lys Asp Ile Gln Asn Leu Ile Ile Ala Glu Ser Glu Tyr Met
    595               600               605
Gly Tyr Gly Tyr Gln Gly Ser Trp Glu Phe Ser Trp Ser Pro Asn Asp
    610               615               620
Thr Lys Glu Lys Lys Thr Ile Ile Ala Ser Trp Thr Pro Thr Gly Glu
625               630               635               640
Phe Ser Leu Asp Pro Lys Arg Arg Gly Ser Phe Ile Pro Thr Thr Leu
            645               650               655
Trp Ser Thr Phe Ser Gly Leu Asn Ile Ala Ser Asn Ile Val Asn Asn
            660               665               670
Asn Tyr Leu Asn Asn Ser Glu Val Ile Pro Leu Gln His Leu Cys Val
        675               680               685
Phe Gly Gly Pro Val Tyr Gln Ile Met Glu Gln Asn Pro Lys Gln Ser
    690               695               700
Ser Asn Asn Leu Leu Val Gln His Ala Gly His Asn Val Gly Ala Arg
705               710               715               720
Ile Pro Phe Ser Phe Asn Thr Ile Leu Ser Ala Ala Leu Thr Gln Leu
            725               730               735
Phe Ser Ser Ser Ser Gln Gln Asn Val Ala Asp Lys Ser His Ala Gln
            740               745               750
Ile Leu Ile Gly Thr Val Ser Leu Asn Lys Ser Trp Gln Ala Leu Ser
        755               760               765
```

803

```
Leu Arg Ser Ser Phe Ser Tyr Thr Glu Asp Ser Gln Val Met Lys His
770             775             780
Val Phe Pro Tyr Lys Gly Thr Ser Arg Gly Ser Trp Arg Asn Tyr Gly
785             790             795             800
Trp Ser Gly Ser Val Gly Met Ser Tyr Ala Tyr Pro Lys Gly Ile Arg
            805             810             815
Tyr Leu Lys Met Thr Pro Phe Val Asp Leu Gln Tyr Thr Lys Leu Val
        820             825             830
Gln Asn Pro Phe Val Glu Thr Gly Tyr Asp Pro Arg Tyr Phe Ser Ser
        835             840             845
Ser Glu Met Thr Asn Leu Ser Leu Pro Ile Gly Ile Ala Leu Glu Met
    850             855             860
Arg Phe Ile Gly Ser Arg Ser Ser Leu Phe Leu Gln Val Ser Thr Ser
865             870             875             880
Tyr Ile Lys Asp Leu Arg Arg Val Asn Pro Gln Ser Ser Ala Ser Leu
            885             890             895
Val Leu Asn His Tyr Thr Trp Asp Ile Gln Gly Val Pro Leu Gly Lys
            900             905             910
Glu Ala Leu Asn Ile Thr Leu Asn Ser Thr Ile Lys Tyr Lys Ile Val
        915             920             925
Thr Ala Tyr Met Gly Ile Ser Ser Thr Gln Arg Glu Gly Ser Asn Leu
    930             935             940
Ser Ala Asn Ala His Ala Gly Leu Ser Leu Ser Phe
945             950             955
```

        <210> 542
        <211> 1744
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 542
```
Phe Ile His Leu Ile Tyr Leu Ser Leu Ile Glu Phe Val Asn Ile Ser
1           5               10              15
Asp Arg Phe Ser Ser Met Lys Trp Leu Pro Ala Thr Ala Val Phe Ala
        20              25              30
Ala Val Leu Pro Ala Leu Thr Ala Phe Gly Asp Pro Ala Ser Val Glu
        35              40              45
Ile Ser Thr Ser His Thr Gly Ser Gly Asp Pro Thr Ser Asp Ala Ala
    50              55              60
Leu Thr Gly Phe Thr Gln Ser Ser Thr Glu Thr Asp Gly Thr Thr Tyr
65              70              75              80
Thr Ile Val Gly Asp Ile Thr Phe Ser Thr Phe Thr Asn Ile Pro Val
            85              90              95
Pro Val Val Thr Pro Asp Ala Asn Asp Ser Ser Ser Asn Ser Ser Lys
        100             105             110
Gly Gly Ser Ser Ser Ser Gly Ala Thr Ser Leu Ile Arg Ser Ser Asn
        115             120             125
Leu His Ser Asp Phe Asp Phe Thr Lys Asp Ser Val Leu Asp Leu Tyr
    130             135             140
His Leu Phe Phe Pro Ser Ala Ser Asn Thr Leu Asn Pro Ala Leu Leu
145             150             155             160
Ser Ser Ser Ser Ser Gly Gly Ser Ser Ser Ser Ser Ser Ser Ser Ser
            165             170             175
Ser Gly Ser Ala Ser Ala Val Val Ala Ala Asp Pro Lys Gly Gly Ala
        180             185             190
Ala Phe Tyr Ser Asn Glu Ala Asn Gly Thr Leu Thr Phe Thr Thr Asp
    195             200             205
Ser Gly Asn Pro Gly Ser Leu Thr Leu Gln Asn Leu Lys Met Thr Gly
    210             215             220
Asp Gly Ala Ala Ile Tyr Ser Lys Gly Pro Leu Val Phe Thr Gly Leu
225             230             235             240
```

```
Lys Asn Leu Thr Phe Thr Gly Asn Glu Ser Gln Lys Ser Gly Gly Ala
            245               250           255
Ala Tyr Thr Glu Gly Ala Leu Thr Thr Gln Ala Ile Val Glu Ala Val
            260               265           270
Thr Phe Thr Gly Asn Thr Ser Ala Gly Gln Gly Gly Ala Ile Tyr Val
            275               280           285
Lys Glu Ala Thr Leu Phe Asn Ala Leu Asp Ser Leu Lys Phe Glu Lys
    290               295           300
Asn Thr Ser Gly Gln Ala Gly Gly Gly Ile Tyr Thr Glu Ser Thr Leu
305               310           315               320
Thr Ile Ser Asn Ile Thr Lys Ser Ile Glu Phe Ile Ser Asn Lys Ala
            325               330           335
Ser Val Pro Ala Pro Ala Pro Glu Pro Thr Ser Pro Ala Pro Ser Ser
            340               345           350
Leu Ile Asn Ser Thr Thr Ile Asp Thr Ser Thr Leu Gln Thr Arg Ala
            355               360           365
Ala Ser Ala Thr Pro Ala Val Ala Pro Val Ala Ala Val Thr Pro Thr
          370                 375             380
Pro Ile Ser Thr Gln Glu Thr Ala Gly Asn Gly Gly Ala Ile Tyr Ala
385               390               395           400
Lys Gln Gly Ile Ser Ile Ser Thr Phe Lys Asp Leu Thr Phe Lys Ser
            405               410           415
Asn Ser Ala Ser Val Asp Ala Thr Leu Thr Val Asp Ser Ser Thr Ile
            420               425           430
Gly Glu Ser Gly Gly Ala Ile Phe Ala Ala Asp Ser Ile Gln Ile Gln
            435               440           445
Gln Cys Thr Gly Thr Thr Leu Phe Ser Gly Asn Thr Ala Asn Lys Ser
    450               455           460
Gly Gly Gly Ile Tyr Ala Val Gly Gln Val Thr Leu Glu Asp Ile Ala
465               470               475               480
Asn Leu Lys Met Thr Asn Asn Thr Cys Lys Gly Glu Gly Gly Ala Ile
            485               490               495
Tyr Thr Lys Lys Ala Leu Thr Ile Asn Asn Gly Ala Ile Leu Thr Thr
            500               505           510
Phe Ser Gly Asn Thr Ser Thr Asp Asn Gly Gly Ala Ile Phe Ala Val
            515               520           525
Gly Gly Ile Thr Leu Ser Asp Leu Val Glu Val Arg Phe Ser Lys Asn
            530               535           540
Lys Thr Gly Asn Tyr Ser Ala Pro Ile Thr Lys Ala Ala Ser Asn Thr
545               550               555               560
Ala Pro Val Val Ser Ser Ser Thr Thr Ala Ala Ser Pro Ala Val Pro
                565               570               575
Ala Ala Ala Ala Ala Pro Val Thr Asn Ala Ala Lys Gly Gly Ala Leu
            580               585           590
Tyr Ser Thr Glu Gly Leu Thr Val Ser Gly Ile Thr Ser Ile Leu Ser
            595               600           605
Phe Glu Asn Asn Glu Cys Gln Asn Gln Gly Gly Gly Ala Tyr Val Thr
            610               615           620
Lys Thr Phe Gln Cys Ser Asp Ser His Arg Leu Gln Phe Thr Ser Asn
625               630               635               640
Lys Ala Ala Asp Glu Gly Gly Gly Leu Tyr Cys Gly Asp Asp Val Thr
            645               650           655
Leu Thr Asn Leu Thr Gly Lys Thr Leu Phe Gln Glu Asn Ser Ser Glu
            660               665           670
Lys His Gly Gly Gly Leu Ser Leu Ala Ser Gly Lys Ser Leu Thr Met
            675               680           685
Thr Ser Leu Glu Ser Phe Cys Leu Asn Ala Asn Thr Ala Lys Glu Asn
            690               695           700
Gly Gly Gly Ala Asn Val Pro Glu Asn Ile Val Leu Thr Phe Thr Tyr
705               710           715               720
```

Thr Pro Thr Pro Asn Glu Pro Ala Pro Val Gln Gln Pro Val Tyr Gly
              725   730   735

Glu Ala Leu Val Thr Gly Asn Thr Ala Thr Lys Ser Gly Gly Gly Ile
              740   745   750

Tyr Thr Lys Asn Ala Ala Phe Ser Asn Leu Ser Ser Val Thr Phe Asp
              755   760   765

Gln Asn Thr Ser Ser Glu Asn Gly Gly Ala Leu Leu Thr Gln Lys Ala
   ,770   775   780

Ala Asp Lys Thr Asp Cys Ser Phe Thr Tyr Ile Thr Asn Val Asn Ile
785   790   795   800

Thr Asn Asn Thr Ala Thr Gly Asn Gly Gly Gly Ile Ala Gly Gly Lys
              805   810   815

Ala His Phe Asp Arg Ile Asp Asn Leu Thr Val Gln Ser Asn Gln Ala
              820   825   830

Lys Lys Gly Gly Gly Val Tyr Leu Glu Asp Ala Leu Ile Leu Glu Lys
              835   840   845

Val Ile Thr Gly Ser Val Ser Gln Asn Thr Ala Thr Glu Ser Gly Gly
              850   855   860

Gly Ile Tyr Ala Lys Asp Ile Gln Leu Gln Ala Leu Pro Gly Ser Phe
865   870   875   880

Thr Ile Thr Asp Asn Lys Val Glu Thr Ser Leu Thr Thr Ser Thr Asn
              885   890   895

Leu Tyr Gly Gly Gly Ile Tyr Ser Ser Gly Ala Val Thr Leu Thr Asn
              900   905   910

Ile Ser Gly Thr Phe Gly Ile Thr Gly Asn Ser Val Ile Asn Thr Ala
              915   920   925

Thr Ser Gln Asp Ala Asp Ile Gln Gly Gly Gly Ile Tyr Ala Thr Thr
              930   935   940

Ser Leu Ser Ile Asn Gln Cys Asn Thr Pro Ile Leu Phe Ser Asn Asn
945   950   955   960

Ser Ala Ala Thr Lys Lys Thr Ser Thr Thr Lys Gln Ile Ala Gly Gly
              965   970   975

Ala Ile Phe Ser Ala Ala Val Thr Ile Glu Asn Asn Ser Gln Pro Ile
              980   985   990

Ile Phe Leu Asn Asn Ser Ala Lys Ser Glu Ala Thr Thr Ala Ala Thr
              995   1000   1005

Ala Gly Asn Lys Asp Ser Cys Gly Gly Ala Ile Ala Ala Asn Ser Val
1010   1015   1020

Thr Leu Thr Asn Asn Pro Glu Ile Thr Phe Lys Gly Asn Tyr Ala Glu
1025   1030   1035   1040

Thr Gly Gly Ala Ile Gly Cys Ile Asp Leu Thr Asn Gly Ser Pro Pro
              1045   1050   1055

Arg Lys Val Ser Ile Ala Asp Asn Gly Ser Val Leu Phe Gln Asp Asn
              1060   1065   1070

Ser Ala Leu Asn Arg Gly Gly Ala Ile Tyr Gly Glu Thr Ile Asp Ile
              1075   1080   1085

Ser Arg Thr Gly Ala Thr Phe Ile Gly Asn Ser Ser Lys His Asp Gly
              1090   1095   1100

Ser Ala Ile Cys Cys Ser Thr Ala Leu Thr Leu Ala Pro Asn Ser Gln
1105   1110   1115   1120

Leu Ile Phe Glu Asn Asn Lys Val Thr Glu Thr Thr Ala Thr Thr Lys
              1125   1130   1135

Ala Ser Ile Asn Asn Leu Gly Ala Ala Ile Tyr Gly Asn Asn Glu Thr
              1140   1145   1150

Ser Asp Val Thr Ile Ser Leu Ser Ala Glu Asn Gly Ser Ile Phe Phe
              1155   1160   1165

Lys Asn Asn Leu Cys Thr Ala Thr Asn Lys Tyr Cys Ser Ile Ala Gly
              1170   1175   1180

Asn Val Lys Phe Thr Ala Ile Glu Ala Ser Ala Gly Lys Ala Ile Ser
1185   1190   1195   1200

```
Phe Tyr Asp Ala Val Asn Val Ser Thr Lys Glu Thr Asn Ala Gln Glu
          1205                1210                1215
Leu Lys Leu Asn Glu Lys Ala Thr Ser Thr Gly Thr Ile Leu Phe Ser
          1220                1225                1230
Gly Glu Leu His Glu Asn Lys Ser Tyr Ile Pro Gln Lys Val Thr Phe
          1235                1240                1245
Ala His Gly Asn Leu Ile Leu Gly Lys Asn Ala Glu Leu Ser Val Val
     1250                1255                1260
Ser Phe Thr Gln Ser Pro Gly Thr Thr Ile Thr Met Gly Pro Gly Ser
1265                1270                1275                1280
Val Leu Ser Asn His Ser Lys Glu Ala Gly Gly Ile Ala Ile Asn Asn
               1285                1290                1295
Val Ile Ile Asp Phe Ser Glu Ile Val Pro Thr Lys Asp Asn Ala Thr
          1300                1305                1310
Val Ala Pro Pro Thr Leu Lys Leu Val Ser Arg Thr Asn Ala Asp Ser
          1315                1320                1325
Lys Asp Lys Ile Asp Ile Thr Gly Thr Val Thr Leu Leu Asp Pro Asn
          1330                1335                1340
Gly Asn Leu Tyr Gln Asn Ser Tyr Leu Gly Glu Asp Arg Asp Ile Thr
1345                1350                1355                1360
Leu Phe Asn Ile Asp Asn Ser Ala Ser Gly Ala Val Thr Ala Thr Asn
               1365                1370                1375
Val Thr Leu Gln Gly Asn Leu Gly Ala Lys Lys Gly Tyr Leu Gly Thr
          1380                1385                1390
Trp Asn Leu Asp Pro Asn Ser Ser Gly Ser Lys Ile Ile Leu Lys Trp
     1395                1400                1405
Thr Phe Asp Lys Tyr Leu Arg Trp Pro Tyr Ile Pro Arg Asp Asn His
     1410                1415                1420
Phe Tyr Ile Asn Ser Ile Trp Gly Ala Gln Asn Ser Leu Val Thr Val
1425                1430                1435                1440
Lys Gln Gly Ile Leu Gly Asn Met Leu Asn Asn Ala Arg Phe Glu Asp
               1445                1450                1455
Pro Ala Phe Asn Asn Phe Trp Ala Ser Ala Ile Gly Ser Phe Leu Arg
          1460                1465                1470
Lys Glu Val Ser Arg Asn Ser Asp Ser Phe Thr Tyr His Gly Arg Gly
          1475                1480                1485
Tyr Thr Ala Ala Val Asp Ala Lys Pro Arg Gln Glu Phe Ile Leu Gly
     1490                1495                1500
Ala Ala Phe Ser Gln Val Phe Gly His Ala Glu Ser Glu Tyr His Leu
1505                1510                1515                1520
Asp Asn Tyr Lys His Lys Gly Ser Gly His Ser Thr Gln Ala Ser Leu
          1525                1530                1535
Tyr Ala Gly Asn Ile Phe Tyr Phe Pro Ala Ile Arg Ser Arg Pro Ile
          1540                1545                1550
Leu Phe Gln Gly Val Ala Thr Tyr Gly Tyr Met Gln His Asp Thr Thr
          1555                1560                1565
Thr Tyr Tyr Pro Ser Ile Glu Glu Lys Asn Met Ala Asn Trp Asp Ser
          1570                1575                1580
Ile Ala Trp Leu Phe Asp Leu Arg Phe Ser Val Asp Leu Lys Glu Pro
1585                1590                1595                1600
Gln Pro His Ser Thr Ala Arg Leu Thr Phe Tyr Thr Glu Ala Glu Tyr
               1605                1610                1615
Thr Arg Ile Arg Gln Glu Lys Phe Thr Glu Leu Asp Tyr Asp Pro Arg
          1620                1625                1630
Ser Phe Ser Ala Cys Ser Tyr Gly Asn Leu Ala Ile Pro Thr Gly Phe
     1635                1640                1645
Ser Val Asp Gly Ala Leu Ala Trp Arg Glu Ile Ile Leu Tyr Asn Lys
     1650                1655                1660
Val Ser Ala Ala Tyr Leu Pro Val Ile Leu Arg Asn Asn Pro Lys Ala
1665                1670                1675                1680
```

807

```
Thr Tyr Glu Val Leu Ser Thr Lys Glu Lys Gly Asn Val Val Asn Val
              1685                  1690                  1695
Leu Pro Thr Arg Asn Ala Ala Arg Ala Glu Val Ser Ser Gln Ile Tyr
              1700                  1705                  1710
Leu Gly Ser Tyr Trp Thr Leu Tyr Gly Thr Tyr Thr Ile Asp Ala Ser
              1715                  1720                  1725
Met Asn Thr Leu Val Gln Met Ala Asn Gly Gly Ile Arg Phe Val Phe
    1730                  1735                  1740
```

<210> 543
<211> 289
<212> PRT
<213> Chlamydia pneumoniae

<400> 543
```
Asn Asn Arg Ser Ser Tyr Gln Thr Ala Phe Val Met His Lys Val Ile
  1               5                  10                  15
Val Phe Ile Phe Leu Thr Leu Tyr Ser Leu Lys Ser Tyr Gly Asn Asp
              20                  25                  30
Val Ile Asp Lys Pro His Val Leu Val Ser Ile Ala Pro Tyr Lys Phe
          35                  40                  45
Leu Val Glu Gln Ile Ala Glu Glu Thr Cys Phe Val Tyr Ala Ile Val
      50                  55                  60
Thr Asn His Tyr Asp Pro His Thr Tyr Glu Leu Pro Pro Gln Gln Ile
65                  70                  75                  80
Lys Glu Leu Arg Gln Gly Asp Leu Trp Phe Arg Ile Gly Glu Ala Phe
              85                  90                  95
Glu Lys Thr Cys Glu Arg Asn Leu Thr Cys Gln Gln Val Asp Leu Ser
          100                 105                 110
Gln Asn Val Ser Leu Ile Gln Gly Lys Pro Cys Cys Asn Gln His Thr
          115                 120                 125
Thr Asn Tyr Asp Thr His Thr Trp Leu Ser Pro Lys Asn Leu Lys Val
      130                 135                 140
Gln Val Glu Thr Ile Val Thr Thr Leu Ser Lys Lys Tyr Pro Gln His
145                 150                 155                 160
Ala Thr Leu Tyr Gln Ser Asn Gly Glu Lys Leu Leu Leu Ala Leu Asp
              165                 170                 175
Gln Leu Asn Glu Glu Ile Leu Thr Ile Thr Ser Lys Ala Lys Gln Arg
          180                 185                 190
His Ile Leu Val Ser His Gly Ala Phe Gly Tyr Phe Cys Arg Asp Tyr
      195                 200                 205
Asn Phe Ser Gln His Thr Ile Glu Lys Ser Ser His Val Glu Pro Ser
      210                 215                 220
Pro Lys Asp Val Ala Arg Val Phe Arg Asp Ile Glu Gln Tyr Lys Ile
225                 230                 235                 240
Ser Ser Val Ile Leu Leu Glu Tyr Ser Gly Arg Arg Ser Ser Ala Met
              245                 250                 255
Leu Ala Asp Arg Phe His Met His Thr Val Asn Leu Asp Pro Tyr Ala
          260                 265                 270
Glu Asn Val Leu Val Asn Leu Lys Thr Ile Ala Thr Thr Phe Ser Ser
          275                 280                 285
Leu
```

<210> 544
<211> 246
<212> PRT
<213> Chlamydia pneumoniae

808

<400> 544

```
Phe Met Thr Ile Arg Ile Leu Ala Glu Gly Leu Ala Phe Arg Tyr Gly
1               5                   10                      15
Ser Lys Gly Pro Asn Ile Ile His Asp Val Ser Phe Ser Val Tyr Asp
            20                  25                  30
Gly Asp Phe Ile Gly Ile Ile Gly Pro Asn Gly Gly Gly Lys Ser Thr
        35                  40                  45
Leu Thr Met Leu Ile Leu Gly Leu Leu Thr Pro Thr Phe Gly Ser Leu
        50                  55                  60
Lys Thr Phe Pro Ser His Ser Ala Gly Lys Gln Thr His Ser Met Ile
65              70                  75                      80
Gly Trp Val Pro Gln His Phe Ser Tyr Asp Pro Cys Phe Pro Ile Ser
                85                  90                  95
Val Lys Asp Val Val Leu Ser Gly Arg Leu Ser Gln Leu Ser Trp His
        100                 105                 110
Gly Lys Tyr Lys Lys Lys Asp Phe Glu Ala Val Asp His Ala Leu Asp
        115                 120                 125
Leu Val Gly Leu Ser Asp His His His His Cys Phe Ala His Leu Ser
        130                 135                 140
Gly Gly Gln Ile Gln Arg Val Leu Leu Ala Arg Ala Leu Ala Ser Tyr
145                 150                 155                 160
Pro Glu Ile Leu Ile Leu Asp Glu Pro Thr Thr Asn Ile Asp Pro Asp
                165                 170                 175
Asn Gln Gln Arg Ile Leu Ser Ile Leu Lys Lys Leu Asn Arg Thr Cys
            180                 185                 190
Thr Ile Leu Met Val Thr His Asp Leu His His Thr Thr Asn Tyr Phe
        195                 200                 205
Asn Lys Val Phe Tyr Met Asn Lys Thr Leu Thr Ser Leu Ala Asp Thr
        210                 215                 220
Ser Thr Leu Thr Asp Gln Phe Cys Cys His Pro Tyr Lys Asn Gln Glu
225                 230                 235                 240
Phe Ser Cys Ser Pro His
                245
```

<400> 545
<210> 545
<211> 298
<212> PRT
<213> Chlamydia pneumoniae

<400> 545

```
Lys Ser Gly Ile Phe Met Leu Ser Ser Leu Ile Arg Asp Ser Phe Pro
1               5                   10                      15
Leu Leu Ile Leu Leu Pro Thr Phe Leu Ala Ala Leu Gly Ala Ser Val
            20                  25                  30
Ala Gly Gly Val Met Gly Thr Tyr Ile Val Val Lys Arg Ile Val Ser
        35                  40                  45
Ile Ser Gly Ser Ile Ser His Ala Ile Leu Gly Gly Ile Gly Leu Thr
        50                  55                  60
Leu Trp Ile Gln Tyr Lys Leu His Leu Ser Phe Phe Pro Met Tyr Gly
65              70                  75                      80
Ala Ile Val Gly Ala Ile Phe Leu Ala Leu Cys Ile Gly Lys Ile His
                85                  90                  95
Leu Lys Tyr Gln Glu Arg Glu Asp Ser Leu Ile Ala Met Ile Trp Ser
        100                 105                 110
Val Gly Met Ala Ile Gly Ile Ile Phe Ile Ser Arg Leu Pro Thr Phe
        115                 120                 125
Asn Gly Glu Leu Ile Asn Phe Leu Phe Gly Asn Ile Leu Trp Val Thr
        130                 135                 140
Pro Ser Asp Leu Tyr Ser Leu Gly Ile Phe Asp Leu Leu Val Leu Gly
145                 150                 155                 160
```
```

809
```

```
Ile Val Val Leu Cys His Thr Arg Phe Leu Ala Leu Cys Phe Asp Glu
                165                 170                 175
Arg Tyr Thr Ala Leu Asn His Cys Ser Val Gln Leu Trp Tyr Phe Leu
            180                 185                 190
Leu Leu Val Leu Thr Ala Ile Thr Ile Val Met Leu Ile Tyr Val Met
        195                 200                 205
Gly Thr Ile Leu Met Leu Ser Met Leu Val Leu Pro Val Ala Ile Ala
    210                 215                 220
Cys Arg Phe Ser Tyr Lys Met Thr Arg Ile Met Phe Ile Ser Val Leu
225                 230                 235                 240
Leu Asn Ile Leu Cys Ser Phe Ser Gly Ile Cys Ile Ala Tyr Cys Leu
            245                 250                 255
Asp Phe Pro Val Gly Pro Thr Ile Ser Leu Leu Met Gly Leu Gly Tyr
            260                 265                 270
Thr Ala Ser Leu Cys Val Lys Lys Arg Tyr Asn Pro Ser Thr Pro Ser
    275                 280                 285
Pro Val Ser Pro Glu Ile Asn Thr Asn Val
    290                 295

        <210> 546
        <211> 358
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 546
Lys Ser Ser Val Phe Cys Ser Gly Ile Lys Ser Ser Phe Phe Cys Leu
1               5                   10                  15
Lys Lys Asp Lys Asn Val Ile Met Phe Val Asp Gln Ile Thr Leu Glu
            20                  25                  30
Leu Arg Ala Gly Lys Gly Gly Asn Gly Val Val Ala Trp Arg Lys Glu
        35                  40                  45
Lys Tyr Leu Pro Lys Gly Gly Pro Tyr Gly Gly Asn Gly Gly Asn Gly
    50                  55                  60
Gly Ser Val Ile Ile Glu Ala Thr Thr Ser Val Tyr Ser Phe Glu Ala
65                  70                  75                  80
Tyr Arg Asn Ile Arg Phe Leu Lys Ala Pro Asp Gly Gln Ser Gly Ala
            85                  90                  95
Thr Asn Asn Arg Thr Gly Arg Ser Gly Lys Asp Leu Ile Val Ser Val
            100                 105                 110
Pro Thr Gly Thr Leu Leu Arg Asp Ala Glu Thr Gly Glu Ile Leu His
    115                 120                 125
Asp Phe Thr Val Asp Gly Glu Arg Leu Leu Val Ser Gln Gly Gly Lys
    130                 135                 140
Gly Gly Lys Gly Asn Thr Phe Phe Lys Thr Ser Val Asn Arg Ala Pro
145                 150                 155                 160
Thr Lys Ala Thr Pro Gly Lys Pro Gly Glu Ile Arg Gln Val Glu Leu
            165                 170                 175
Glu Leu Lys Leu Ile Ala Asp Ile Gly Leu Val Gly Phe Pro Asn Ala
            180                 185                 190
Gly Lys Ser Thr Leu Phe Asn Thr Leu Ala His Thr Glu Val Lys Val
        195                 200                 205
Gly Ala Tyr Pro Phe Thr Thr Leu Ala Pro Ser Leu Gly Leu Val Leu
    210                 215                 220
Cys Lys Asp Arg Leu Tyr Gln Lys Pro Trp Ile Ile Ala Asp Ile Pro
225                 230                 235                 240
Gly Ile Ile Glu Gly Ala His Gln Asn Lys Gly Leu Gly Leu Asp Phe
            245                 250                 255
Leu Arg His Ile Glu Arg Thr Leu Leu Leu Leu Phe Val Ile Asp Val
            260                 265                 270
Ser Lys Arg Glu Arg Asn Ser Pro Glu Glu Asp Leu Glu Thr Leu Ile
    275                 280                 285
```

```
His Glu Leu His Ser His Gln Pro Asp Phe Glu Lys Lys Asp Met Leu
    290                 295                 300
Val Ala Leu Asn Lys Ile Asp Asp Leu Leu Pro Asp Glu Gln Glu Glu
305                 310                 315                 320
Cys Leu Gln Ser Phe Gln Lys Arg Phe Pro Ser Tyr Thr Phe Val Leu
                325                 330                 335
Ile Ser Gly Leu Thr Gly Glu Gly Val Asp Gly Leu Tyr Arg Phe Phe
                340                 345                 350
Thr Gln Arg Leu Ala Val
            355
```

```
        <210> 547
        <211> 92
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 547
Thr Glu Ala Arg Glu Phe Arg Val Met Ala His Lys Lys Gly Gln Gly
1                   5                   10                  15
Ala Ser Arg Asn Gly Arg Asp Ser Lys Ser Lys Arg Leu Gly Val Lys
                20                  25                  30
Val Gly Ala Gly Gln Lys Val Ser Thr Gly Ser Ile Leu Val Arg Gln
        35                  40                  45
Arg Gly Thr Arg Trp Asn Pro Ala Gln Asn Val Gly Arg Gly Arg Asp
    50                  55                  60
Asp Thr Leu Phe Ala Leu Val Asp Gly Ile Val Val Met Lys Lys Thr
65                  70                  75                  80
Asn Arg Thr Tyr Ile Ser Val Val Pro Glu Gln Leu
                85                  90
```

```
        <210> 548
        <211> 124
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 548
Leu Ser Lys Gln Arg Leu Thr Leu Ser Ile Glu Arg Phe Ile Arg Lys
1                   5                   10                  15
Lys Leu Met Glu Pro Tyr Ala Val Ile Gln Thr Gly Ser Lys Gln Tyr
                20                  25                  30
Gln Val Arg Ser Gly Asp Val Ile Asp Val Glu Leu Leu Gly Glu Val
        35                  40                  45
Ala Ser Asp Lys Glu Val Ile Phe Gln Asp Val Leu Phe Val Phe Asp
    50                  55                  60
Gly Thr Lys Ala Ser Leu Gly Ser Pro Thr Ile Ala Asn Ala Gln Val
65                  70                  75                  80
Lys Ala Glu Tyr Leu Ser His Val Lys Gly Glu Lys Val Val Ala Tyr
                85                  90                  95
Lys Tyr Lys Lys Arg Lys Asn Tyr His Arg Lys His Gly His Arg Gln
                100                 105                 110
Lys Tyr Leu Arg Val Lys Ile Arg Glu Ile Leu Ile
            115                 120
```

```
        <210> 549
        <211> 200
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 549
Cys Val Asn Phe Arg Asn Phe Val Val Ser Ser Val Lys Glu Ile Leu
1                   5                   10                  15
```

811

Lys Lys Asn Ile Tyr Gln Val Val Met Asp Arg Asp Asn Glu Val Pro
            20   25   30
Leu Pro Lys Pro Lys Trp Ile Tyr Arg Thr Gly Ile Gly Gln Asp Ser
        35   40   45
His Arg Phe Leu Pro Glu Ser Ser Thr Lys Pro Cys Ile Leu Gly Gly
    50   55   60
Ile Ile Phe Asp His Cys Pro Gly Phe Gln Ala Asn Ser Asp Gly Asp
65   70   75   80
Ile Ile Phe His Ala Ile Cys Asn Ala Ile Ser Ser Val Thr Asn Lys
            85   90   95
Ile Ile Leu Gly Lys Val Ala Asp Glu Leu Leu Gln Thr Arg Gly Ile
            100   105   110
Thr Asp Ser Gly Ile Tyr Leu Glu Glu Ala Leu Lys Ser Leu Lys Pro
        115   120   125
Asn Gln Lys Ile Ser His Val Ala Ile Thr Ile Glu Gly Ser Arg Pro
    130   135   140
Lys Phe Leu Cys Lys Leu Ser Ala Leu Arg Gln Asn Ile Ala Gln Val
145   150   155   160
Met Asn Leu Thr Pro Thr Asp Ile Gly Ile Thr Ala Thr Ser Gly Glu
            165   170   175
Gly Leu Ser Asp Phe Gly Cys Gly Asp Gly Val Gln Cys Phe Cys Val
        180   185   190
Leu Thr Val Met Glu Tyr Cys Asp
        195   200

        <210> 550
        <211> 348
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 550
Lys Met Tyr Leu Gln Glu Lys Phe Lys Ala Gln Gln Val Pro Leu Val
1   5   10   15
Leu Arg Glu Leu Leu Ser Cys Ser Asp Ser Ile Asn Asp Ser Asp Pro
            20   25   30
Ile Tyr Arg Met Val Phe Asp Ser Asn Asp Thr Thr Ile Ser Tyr Lys
        35   40   45
Val Gly Asp Ala Leu Gly Val Leu Pro Glu Asn Ser Lys Glu Val Ser
        50   55   60
Glu His Val Leu Gln Leu Leu Gly Tyr Ser Pro Thr Thr Leu Val Asn
65   70   75   80
Val Lys Lys Thr Ser Glu Lys Val Ser Ala Gln Lys Phe Ile Gln Gly
            85   90   95
Tyr Val Asp Leu Asp Lys Ile Pro Ala Lys Leu Asn Ser Phe Phe Pro
        100   105   110
Asp Lys Asp Pro Lys Ile Thr Leu Tyr Asp Ala Ile Gln Glu Tyr Arg
        115   120   125
Pro Gln Ile Pro Ile Glu Leu Phe Ala Glu Ser Val Phe Pro Leu Leu
        130   135   140
Pro Arg Phe Tyr Ser Ile Ala Ser Ser Pro Asp Leu His Pro Lys Ser
145   150   155   160
Ile Glu Leu Leu Val Lys His Val Ser Tyr Pro Gly Lys Tyr Gln Lys
            165   170   175
Arg Phe Gly Val Cys Ser Ser Phe Leu Cys Ser Glu Leu Gln Val Asn
            180   185   190
Asp Ser Ala Tyr Ile Phe Val Gln Pro Thr Lys His Phe Thr Leu Ser
        195   200   205
Thr Gln Thr Glu Gly Lys Pro Leu Val Met Ile Gly Ala Gly Thr Gly
        210   215   220
Ile Ala Pro Tyr Lys Ala Phe Leu Glu Glu Arg Leu Phe Asn Lys Asp
225   230   235   240

812

```
Pro Gly Asn Asn Leu Leu Phe Phe Gly Glu Arg Lys Glu Lys Val Asn
            245                     250                 255
Phe Tyr Tyr Arg Glu Phe Trp Asn His Ala Glu Glu Glu Gly Lys Leu
            260             265                     270
Lys Leu Phe Leu Ala Phe Ser Arg Glu Arg Asp Gln Lys Val Tyr Val
            275             280                 285
Gln Asp Leu Leu Arg Ile.Gln Lys Asp Glu Val Arg Lys Ala Tyr Glu
            290             295                 300
Glu Gly Gly Phe Phe Phe Val Cys Gly Arg Lys Val Leu Gly Ile Glu
305             310                 315                     320
Val Lys His Ala Leu Glu Glu Ile Leu Gly Lys Asp Thr Leu Ala Ser
                325                 330                 335
Leu Arg Lys Glu His Arg Tyr Val Val Asp Val Tyr
            340             345
```

<210> 551
<211> 136
<212> PRT
<213> Chlamydia pneumoniae

<400> 551
```
Pro Gln Asp Val Gln His Gln Pro Trp Asn Gln His Ser Leu Leu Arg
1               5               10                  15
Phe Leu Lys Lys Phe Lys Lys Arg Leu Leu Arg Ser Lys Gly Cys Met
            20              25                  30
Lys Gln Gln Lys Gln Lys Ile Arg Ile Arg Leu Lys Gly Phe Asp Gln
            35              40                  45
Gly Gln Leu Asp Arg Ser Thr Ala Asp Ile Val Glu Thr Ala Lys Arg
    50              55                  60
Thr Gly Ala Arg Val Val Gly Pro Ile Pro Leu Pro Thr Lys Arg Glu
65              70                  75                  80
Val Tyr Thr Val Leu Arg Ser Pro His Val Asp Lys Lys Ser Arg Glu
                85                  90                  95
Gln Phe Glu Ile Arg Thr His Lys Arg Leu Val Asp Ile Leu Asp Pro
                100                 105                 110
Thr Gly Lys Thr Ile Asp Ala Leu Lys Met Leu Ala Leu Pro Ala Gly
            115                 120                 125
Val Asp Ile Lys Ile Lys Ala Ala
    130                 135
```

<210> 552
<211> 703
<212> PRT
<213> Chlamydia pneumoniae

<400> 552
```
Leu Asn Tyr Gly Glu Asn Asn Lys Phe Met Ser Asn Gln Glu Phe Asp
1               5               10                  15
Leu Ser Ala Ile Arg Asn Ile Gly Ile Met Ala His Ile Asp Ala Gly
            20              25                  30
Lys Thr Thr Thr Thr Glu Arg Ile Leu Phe Tyr Ala Gly Arg Thr His
            35              40                  45
Lys Ile Gly Glu Val His Glu Gly Gly Ala Thr Met Asp Trp Met Ala
    50              55                  60
Gln Glu Gln Glu Arg Gly Ile Thr Ile Thr Ser Ala Ala Thr Thr Val
65              70                  75                  80
Phe Trp Leu Gly Ala Lys Ile Asn Ile Ile Asp Thr Pro Gly His Val
                85                  90                  95
Asp Phe Thr Ile Glu Val Glu Arg Ser Leu Arg Val Leu Asp Gly Ala
                100                 105                 110
```

```
Val Ala Val Phe Asp Ala Val Ser Gly Val Glu Pro Gln Ser Glu Thr
        115                     120              125
Val Trp Arg Gln Ala Asp Lys Tyr Gly Val Pro Arg Ile Ala Phe Val
        130                     135              140
Asn Lys Met Asp Arg Met Gly Ala Asp Tyr Phe Ala Ala Val Glu Ser
145                     150              155                  160
Met Lys Glu Lys Leu Gly Ala Asn Ala Phe Pro Val His Cys Pro Ile
            165                 170                  175
Gly Ser Glu Ser Gln Phe Val Gly Met Val Asp Leu Ile Ser Gln Lys
            180                 185              190
Ala Leu Tyr Phe Leu Asp Asp Thr Leu Gly Ala Lys Trp Glu Glu Lys
        195                 200                  205
Glu Ile Ser Glu Asp Leu Lys Glu Arg Cys Ala Glu Leu Arg Ala Asn
    210                 215                  220
Leu Leu Glu Glu Leu Ala Thr Ile Asp Glu Ser Asn Glu Ala Phe Met
225                 230                  235                  240
Met Lys Val Leu Glu Asp Pro Asp Ser Ile Thr Glu Asp Glu Ile His
                245                 250                  255
Gln Val Met Arg Lys Gly Val Ile Glu Asn Lys Ile Asn Pro Val Leu
            260                 265                  270
Cys Gly Thr Ala Phe Lys Asn Lys Gly Val Gln Gln Leu Leu Asn Val
        275                 280                  285
Ile Val Lys Trp Leu Pro Ser Pro Leu Asp Arg Gly Asn Ile Arg Gly
    290                 295                  300
Ile Asn Leu Lys Thr Asp Gln Glu Ile Ser Leu Glu Pro Arg Arg Asp
305                 310                  315                  320
Gly Pro Leu Ala Ala Leu Ala Phe Lys Ile Met Thr Asp Pro Tyr Val
                325                 330                  335
Gly Arg Ile Thr Phe Ile Arg Ile Tyr Ser Gly Thr Leu Lys Lys Gly
            340                 345                  350
Ser Ala Ile Leu Asn Ser Thr Lys Asp Lys Lys Glu Arg Ile Ser Arg
        355                 360                  365
Leu Leu Glu Met His Ala Asn Glu Arg Thr Asp Arg Asp Glu Phe Thr
    370                 375                  380
Val Gly Asp Ile Gly Ala Cys Val Gly Leu Lys Phe Ser Val Thr Gly
385                 390                  395                  400
Asp Thr Leu Cys Asp Asp Asn Gln Glu Ile Val Leu Glu Arg Ile Glu
                405                 410                  415
Phe Pro Asp Pro Val Ile Asp Met Ala Ile Glu Pro Lys Ser Lys Gly
            420                 425                  430
Asp Arg Glu Lys Leu Ala Gln Ala Leu Ser Ser Leu Ser Glu Glu Asp
        435                 440                  445
Pro Thr Phe Arg Val Ser Thr Asn Glu Glu Thr Gly Gln Thr Ile Ile
    450                 455                  460
Ser Gly Met Gly Glu Leu His Leu Asp Ile Leu Arg Asp Arg Met Ile
465                 470                  475                  480
Arg Glu Phe Lys Val Glu Ala Asn Val Gly Lys Pro Gln Val Ser Tyr
                485                 490                  495
Lys Glu Thr Ile Thr Val Ser Gly Asn Ser Glu Thr Lys Tyr Val Lys
            500                 505                  510
Gln Ser Gly Gly Arg Gly Gln Tyr Ala His Val Cys Leu Glu Ile Glu
        515                 520                  525
Pro Asn Glu Pro Gly Lys Gly Asn Glu Val Val Ser Lys Ile Val Gly
    530                 535                  540
Gly Val Ile Pro Lys Glu Tyr Ile Pro Ala Val Ile Lys Gly Ile Glu
545                 550                  555                  560
Glu Gly Leu Asn Thr Gly Val Leu Ala Gly Tyr Gly Leu Val Asp Val
                565                 .       570                  575
Lys Val Ser Ile Val Phe Gly Ser Tyr His Glu Val Asp Ser Ser Glu
        580                 585                  590
```

814

```
Met Ala Phe Lys Ile Cys Gly Ser Met Ala Val Lys Asp Ala Cys Arg
        595                 600                 605
Lys Ala Lys Pro Val Ile Leu Glu Pro Ile Met Lys Val Ala Val Ile
        610             615                 620
Thr Pro Glu Asp His Leu Gly Asp Val Ile Gly Asp Leu Asn Arg Arg
625                 630                 635                     640
Arg Gly Lys Ile Leu Gly Gln Glu Ser Ser Arg Gly Met Ala Gln Val
                645                 650                 655
Asn Ala Glu Val Pro Leu Ser Glu Met Phe Gly Tyr Thr Thr Ser Leu
            660                 665                 670
Arg Ser Leu Thr Ser Gly Arg Ala Thr Ser Thr Met Glu Pro Ala Phe
        675                 680                 685
Phe Ala Lys Val Pro Gln Lys Ile Gln Glu Glu Ile Val Lys Lys
        690             695                 700
```

<210> 553
<211> 159
<212> PRT
<213> Chlamydia pneumoniae

<400> 553
```
Met Tyr Met Ser Arg Arg His Ser Ala Glu Lys Arg Asp Ile Pro Gly
1               5                   10                  15
Asp Pro Ile Tyr Gly Ser Val Ile Leu Glu Lys Phe Ile Asn Lys Val
            20                  25                  30
Met Met His Gly Lys Lys Ser Val Ala Arg Lys Ile Val Tyr Ser Ala
        35                  40                  45
Leu Glu Arg Phe Gly Lys Lys Leu Asn Leu Glu Asn Val Leu Glu Gly
    50                  55                  60
Phe Gly Glu Ala Leu Glu Asn Ala Lys Pro Ile Leu Glu Val Arg Ser
65              70                  75                      80
Arg Arg Val Gly Gly Ala Thr Tyr Gln Val Pro Val Glu Val Ala Ser
                85                  90                  95
Glu Arg Arg Asn Cys Leu Ala Met Gln Trp Ile Ile Lys His Ala Arg
            100                 105                 110
Ser Lys Pro Gly Lys Ser Met Glu Val Gly Leu Ala Thr Glu Leu Ile
        115                 120                 125
Asp Cys Phe Asn Lys Gln Gly Ala Thr Ile Lys Lys Arg Glu Asp Thr
130                 135                 140
His Arg Met Ala Glu Ala Asn Lys Ala Phe Ala His Tyr Lys Trp
145                 150                 155
```

<210> 554
<211> 160
<212> PRT
<213> Chlamydia pneumoniae

<400> 554
```
Ile Gln Ala Gly Tyr Val Pro Ser Ser Ser Glu Asn Lys Pro Leu Pro
1               5                   10                  15
Thr Lys Arg Ala Leu Leu Tyr Ile Ser Met Leu Val Val Val Arg Leu
            20                  25                  30
Lys Arg Glu Glu Tyr Met Pro Thr Ile Asn Gln Leu Ile Arg Lys Arg
        35                  40                  45
Arg Lys Ser Ser Leu Ala Arg Lys Lys Ser Pro Ala Leu Gln Lys Cys
    50                  55                  60
Pro Gln Lys Arg Gly Val Cys Leu Gln Val Lys Thr Lys Thr Pro Lys
65                  70                  75                      80
Lys Pro Asn Ser Ala Leu Arg Lys Val Ala Trp Val Arg Leu Ser Asn
                85                  90                  95
```

815

```
Gly Gln Glu Val Ile Ala Tyr Ile Gly Gly Glu Gly His Asn Leu Gln
            100                     105                 110
Glu His Ser Ile Val Leu Ile Gln Gly Gly Arg Val Lys Asp Leu Pro
            115                     120                 125
Gly Val Arg Tyr His Ile Val Arg Gly Thr Leu Asp Cys Ala Ala Val
        130                     135                 140
Lys Asn Arg Lys Gln Ser Arg Ser Arg Tyr Gly Ala Lys Arg Pro Lys
145                     150                 155                 160
```

<210> 555
<211> 314
<212> PRT
<213> Chlamydia pneumoniae

<400> 555
```
Gly Cys Met Trp Arg Val Val Leu Arg Phe Leu Ile Ile Phe Ile Leu
  1               5                   10                  15
Gly Arg Ala Val Phe Pro Leu Arg Ala Ser Glu Ser Phe Ser Trp Glu
            20                  25                  30
Thr Ser Thr Cys Leu Thr Val Leu Gly Ile Pro Phe Ile Asp Ile Ile
        35                  40                  45
Leu Thr Thr Asn Glu Asp Phe Val Ala Gln Cys Gly Leu Gln Ile Gly
        50                  55                  60
Thr Ile Ser Ser Thr Asn Asn Ala Lys Ile Lys Glu Ile Phe Leu Ile
65                  70                  75                  80
Tyr Lys Glu Lys Phe Pro Glu Ala Ser Ile Ser Phe Lys Arg Lys Glu
                    85                  90                  95
Pro Leu Asn Leu Ser Gln Ser His Leu Ser Asp Leu Gly Ile Leu Cys
            100                     105                 110
Met Arg Asn Gly Glu Thr Tyr Ala Glu Gly Met Ala Asn Lys Glu Asn
        115                     120                 125
Gly Pro Ala Leu Lys Gln Pro Lys Asp Leu Arg Leu Val Leu Arg Cys
    130                     135                 140
Pro Asn Gln Pro Asp Thr Leu Leu Tyr Ser Glu Lys Glu Ala Glu Lys
145                     150                 155                 160
Gly Ile Glu Thr Asn Thr Cys Leu Cys Asn Gln Gly Tyr Thr Leu Leu
                165                     170                 175
Asp Gly Gln Leu Ile Leu Tyr Gly Asp Ser Ile Glu Lys Phe Leu Lys
            180                     185                 190
Glu Thr Lys Arg Lys Asn Asn His Thr Leu Val Asp Leu Cys Asp Ser
            195                     200                 205
Gln Val Val Thr Thr Phe Leu Gly Arg Phe Trp Ser Leu Leu Asn Tyr
    210                     215                 220
Val Gln Val Leu Phe Leu Ser Glu Asp Ser Ala Lys Ile Leu Ala Gly
225                     230                 235                 240
Ile Pro Asp Leu Ala Gln Ala Thr Gln Leu Leu Ser His Thr Val Pro
                245                     250                 255
Leu Leu Phe Ile Tyr Thr Asn Asp Ser Ile His Ile Ile Glu Gln Gly
                260                     265                 270
Lys Glu Ser Ser Phe Thr Tyr Asn Gln Asp Leu Thr Glu Pro Ile Leu
        275                     280                 285
Gly Phe Leu Phe Gly Tyr Ile Asn Arg Gly Ser Met Glu Tyr Cys Phe
    290                     295                 300
Asn Cys Ala Gln Ser Ser Leu Gly Glu Thr
305                     310
```

<210> 556
<211> 112
<212> PRT
<213> Chlamydia pneumoniae

816

<400> 556

```
Val Phe Ser Tyr Leu Leu Leu Cys Ile Ile Leu Val Tyr Val Arg Phe
1               5                   10                  15
Met Tyr Glu Gly Lys Ser Arg Met Ala Ser Pro Thr Pro Gly Gln Leu
        20                  25                  30
His Leu Gln Gln Lys Val Glu Ser Lys Ala Tyr Asp Tyr Ser Arg Ser
    35                  40                  45
Leu Ala Met Ile Ala Thr Ala Leu Leu Phe Phe Ile Val Ala Leu Ile
    50                  55                  60
Leu Ser Gly Leu Ser Leu Leu Pro Gln Val Phe Leu Pro Phe Ser Gly
65              70                  75                  80
Ala Tyr Phe Ile Ile Gly Ser Phe Leu Ala Phe Ile Ala Leu Gly Ile
            85                  90                  95
Leu Leu Ile Asn Cys Val Cys Asp Leu Lys Gln Tyr Leu Thr Ser Ser
        100                 105                 110
```

<210> 557
<211> 648
<212> PRT
<213> Chlamydia pneumoniae

<400> 557

```
Met Phe Val Met Lys Lys Leu Val Arg Leu Cys Val Val Leu Leu Ser
1               5                   10                  15
Leu Leu Pro Asn Val Leu Phe Ser Ser Asp Leu Leu Arg Glu Glu Gly
        20                  25                  30
Ile Lys Lys Met Met Asp Lys Leu Ile Glu Tyr His Val Asp Ala Gln
    35                  40                  45
Glu Val Ser Thr Asp Ile Leu Ser Arg Ser Leu Ser Ser Tyr Ile Gln
    50                  55                  60
Ser Phe Asp Pro His Lys Ser Tyr Leu Ser Asn Gln Glu Val Ala Val
65              70                  75                  80
Phe Leu Gln Ser Pro Glu Thr Lys Lys Arg Leu Leu Lys Asn Tyr Lys
            85                  90                  95
Ala Gly Asn Phe Ala Ile Tyr Arg Asn Ile Asn Gln Leu Ile His Glu
            100                 105                 110
Ser Ile Leu Arg Ala Arg Gln Trp Arg Asn Glu Trp Val Lys Asn Pro
    115                 120                 125
Lys Glu Leu Val Leu Glu Ala Ser Ser Tyr Gln Ile Ser Lys Gln Pro
    130                 135                 140
Met Gln Trp Ser Lys Ser Leu Asp Glu Val Lys Gln Arg Gln Arg Ala
145             150                 155                 160
Leu Leu Leu Ser Tyr Leu Ser Leu His Leu Ala Gly Ala Ser Ser Ser
            165                 170                 175
Arg Tyr Glu Gly Lys Glu Glu Gln Leu Ala Ala Leu Cys Leu Arg Gln
        180                 185                 190
Ile Glu Asn His Glu Asn Val Tyr Leu Gly Ile Asn Asp His Gly Val
    195                 200                 205
Ala Met Asp Arg Asp Glu Glu Ala Tyr Gln Phe His Ile Arg Val Val
    210                 215                 220
Lys Ala Leu Ala His Ser Leu Asp Ala His Thr Ala Tyr Phe Ser Lys
225             230                 235                 240
Asp Glu Ala Leu Ala Met Arg Ile Gln Leu Glu Lys Gly Met Cys Gly
            245                 250                 255
Ile Gly Val Val Leu Lys Glu Asp Ile Asp Gly Val Val Val Arg Glu
        260                 265                 270
Ile Ile Pro Gly Gly Pro Ala Ala Lys Ser Gly Asp Leu Gln Leu Gly
    275                 280                 285
Asp Ile Ile Tyr Arg Val Asp Gly Lys Asp Ile Glu His Leu Ser Phe
290                 295                 300
```

817

```
Arg Gly Val Leu Asp Cys Leu Arg Gly Gly His Gly Ser Thr Val Val
305                 310                 315                 320
Leu Asp Ile His Arg Gly Glu Ser Asp His Thr Ile Ala Leu Arg Arg
                325                 330                 335
Glu Lys Ile Leu Leu Glu Asp Arg Arg Val Asp Val Ser Tyr Glu Pro
            340                 345                 350
Tyr Gly Asp Gly Val Ile Gly Lys Val Thr Leu His Ser Phe Tyr Glu
        355                 360                 365
Gly Glu Asn Gln Val Ser Ser Glu Gln Asp Leu Arg Arg Ala Ile Gln
    370                 375                 380
Gly Leu Lys Glu Lys Asn Leu Leu Gly Leu Val Leu Asp Ile Arg Glu
385                 390                 395                 400
Asn Thr Gly Gly Phe Leu Ser Gln Ala Ile Lys Val Ser Gly Leu Phe
                405                 410                 415
Met Thr Asn Gly Val Val Val Val Ser Arg Tyr Ala Asp Gly Thr Met
                420                 425                 430
Lys Cys Tyr Arg Thr Val Ser Pro Lys Lys Phe Tyr Asp Gly Pro Leu
            435                 440                 445
Ala Ile Leu Val Ser Lys Ser Ser Ala Ser Ala Ala Glu Ile Val Ala
    450                 455                 460
Gln Thr Leu Gln Asp Tyr Gly Val Ala Leu Val Val Gly Asp Glu Gln
465                 470                 475                 480
Thr Tyr Gly Lys Gly Thr Ile Gln His Gln Thr Ile Thr Gly Asp Ala
            485                 490                 495
Ser Gln Asp Asp Cys Phe Lys Val Thr Val Gly Lys Tyr Tyr Ser Pro
            500                 505                 510
Ser Gly Lys Ser Thr Gln Leu Gln Gly Val Lys Ser Asp Ile Leu Ile
    515                 520                 525
Pro Ser Leu Tyr Ala Glu Asp Arg Leu Gly Glu Arg Phe Leu Glu His
    530                 535                 540
Pro Leu Pro Ala Asp Cys Cys Asp Asn Val Leu His Asp Pro Leu Thr
545                 550                 555                 560
Asp Leu Asp Thr Gln Thr Arg Pro Trp Phe Gln Lys Tyr Tyr Leu Pro
                565                 570                 575
Asn Leu Gln Lys Gln Glu Thr Leu Trp Arg Glu Met Leu Pro Gln Leu
            580                 585                 590
Thr Lys Asn Ser Glu Gln Arg Leu Ser Glu Asn Ser Asn Phe Gln Ala
    595                 600                 605
Phe Leu Ser Gln Ile Lys Ser Ser Glu Lys Thr Asp Leu Ser Tyr Gly
610                 615                 620
Ser Asn Asp Leu Gln Leu Glu Glu Ser Ile Asn Ile Leu Lys Asp Met
625                 630                 635                 640
Ile Leu Leu Gln Gln Cys Arg Lys
                645

        <210> 558
        <211> 199
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 558
Glu Asn Gly Met Ser Ser Asn Leu His Pro Val Gly Gly Thr Gly Thr
1               5                   10                  15
Gly Ala Ala Ala Pro Glu Ser Val Leu Asn Ile Val Glu Glu Ile Ala
        20                  25                  30
Ala Ser Gly Ser Val Thr Ala Gly Leu Gln Ala Ile Thr Ser Ser Pro
        35                  40                  45
Gly Met Val Asn Leu Leu Ile Gly Trp Ala Lys Thr Lys Phe Ile Gln
    50                  55                  60
Pro Ile Arg Glu Ser Lys Leu Phe Gln Ser Arg Ala Cys Gln Ile Thr
65                  70                  75                  80
```

818

```
Leu Leu Val Leu Gly Ile Leu Leu Val Val Ala Gly Leu Ala Cys Met
             85                      90               95
Phe Ile Phe His Ser Gln Leu Gly Ala Asn Ala Phe Trp Leu Ile Ile
            100                 105                 110
Pro Ala Ala Ile Gly Leu Ile Lys Leu Leu Val Thr Ser Leu Cys Phe
            115             120                 125
Asp Glu Ala Cys Thr Ser Glu Lys Leu Met Val Phe Gln Lys Trp Ala
            130             135                 140
Gly Val Leu Glu Asp Gln Leu Asp Asp Gly Ile Leu Asn Asn Ser Asn
145             150                     155                 160
Lys Ile Phe Gly His Val Lys Thr Glu Gly Asn Thr Ser Arg Ala Thr
                165                 170                 175
Thr Pro Val Leu Asn Asp Gly Arg Gly Thr Pro Val Leu Ser Pro Leu
            180                 185                 190
Val Ser Lys Ile Ala Arg Val
            195
```

```
<400> 559
Glu Ile Pro Met Ser Lys Leu Ile Arg Arg Val Val Thr Val Leu Ala
  1             5                  10                  15
Leu Thr Ser Met Ala Ser Cys Phe Ala Ser Gly Gly Ile Glu Ala Ala
            20                  25                  30
Val Ala Glu Ser Leu Ile Thr Lys Ile Val Ala Ser Ala Glu Thr Lys
        35                  40                  45
Pro Ala Pro Val Pro Met Thr Ala Lys Lys Val Arg Leu Val Arg Arg
    50                  55                  60
Asn Lys Gln Pro Val Glu Gln Lys Ser Arg Gly Ala Phe Cys Asp Lys
65                  70                  75                  80
Glu Phe Tyr Pro Cys Glu Glu Gly Arg Cys Gln Pro Val Glu Ala Gln
            85                  90                  95
Gln Glu Ser Cys Tyr Gly Arg Leu Tyr Ser Val Lys Val Asn Asp Asp
            100                 105                 110
Cys Asn Val Glu Ile Cys Gln Ser Val Pro Glu Tyr Ala Thr Val Gly
            115                 120                 125
Ser Pro Tyr Pro Ile Glu Ile Leu Ala Ile Gly Lys Lys Asp Cys Val
            130                 135                 140
Asp Val Val Ile Thr Gln Gln Leu Pro Cys Glu Ala Glu Phe Val Ser
145                 150                 155                 160
Ser Asp Pro Glu Thr Thr Pro Thr Ser Asp Gly Lys Leu Val Trp Lys
                165                 170                 175
Ile Asp Arg Leu Gly Ala Gly Asp Lys Cys Lys Ile Thr Val Trp Val
            180                 185                 190
Lys Pro Leu Lys Glu Gly Cys Cys Phe Thr Ala Ala Thr Val Cys Ala
            195                 200                 205
Cys Pro Glu Leu Arg Ser Tyr Thr Lys Cys Gly Gln Pro Ala Ile Cys
        210                 215                 220
Ile Lys Gln Glu Gly Pro Asp Cys Ala Cys Leu Arg Cys Pro Val Cys
225                 230                 235                 240
Tyr Lys Ile Glu Val Val Asn Thr Gly Ser Ala Ile Ala Arg Asn Val
                245                 250                 255
Thr Val Asp Asn Pro Val Pro Asp Gly Tyr Ser His Ala Ser Gly Gln
            260                 265                 270
Arg Val Leu Ser Phe Asn Leu Gly Asp Met Arg Pro Gly Asp Lys Lys
            275                 280                 285
Val Phe Thr Val Glu Phe Cys Pro Gln Arg Arg Gly Gln Ile Thr Asn
290                 295                 300
```

```
Val Ala Thr Val Thr Tyr Cys Gly Gly His Lys Cys Ser Ala Asn Val
305                 310                 315                 320
Thr Thr Val Val Asn Glu Pro Cys Val Gln Val Asn Ile Ser Gly Ala
                325                 330                 335
Asp Trp Ser Tyr Val Cys Lys Pro Val Glu Tyr Ser Ile Ser Val Ser
                340                 345                 350
Asn Pro Gly Asp Leu Val Leu His Asp Val Val Ile Gln Asp Thr Leu
            355                 360                 365
Pro Ser Gly Val Thr Val Leu Glu Ala Pro Gly Gly Glu Ile Cys Cys
        370                 375                 380
Asn Lys Val Val Trp Arg Ile Lys Glu Met Cys Pro Gly Glu Thr Leu
385                 390                 395                 400
Gln Phe Lys Leu Val Val Lys Ala Gln Val Pro Gly Arg Phe Thr Asn
                405                 410                 415
Gln Val Ala Val Thr Ser Glu Ser Asn Cys Gly Thr Cys Thr Ser Cys
                420                 425                 430
Ala Glu Thr Thr Thr His Trp Lys Gly Leu Ala Ala Thr His Met Cys
            435                 440                 445
Val Leu Asp Thr Asn Asp Pro Ile Cys Val Gly Glu Asn Thr Val Tyr
        450                 455                 460
Arg Ile Cys Val Thr Asn Arg Gly Ser Ala Glu Asp Thr Asn Val Ser
465                 470                 475                 480
Leu Ile Leu Lys Phe Ser Lys Glu Leu Gln Pro Ile Ala Ser Ser Gly
                485                 490                 495
Pro Thr Lys Gly Thr Ile Ser Gly Asn Thr Val Val Phe Asp Ala Leu
            500                 505                 510
Pro Lys Leu Gly Ser Lys Glu Ser Val Glu Phe Ser Val Thr Leu Lys
        515                 520                 525
Gly Ile Ala Pro Gly Asp Ala Arg Gly Glu Ala Ile Leu Ser Ser Asp
        530                 535                 540
Thr Leu Thr Ser Pro Val Ser Asp Thr Glu Asn Thr His Val Tyr
545                 550                 555
```

        <210> 560
        <211> 92
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 560
```
Lys Leu Met Lys Lys Ala Val Leu Ile Ala Ala Met Phe Cys Gly Val
1               5                   10                  15
Val Ser Leu Ser Ser Cys Cys Arg Ile Val Asp Cys Cys Phe Glu Asp
                20                  25                  30
Pro Cys Ala Pro Ser Ser Cys Asn Pro Cys Glu Val Ile Arg Lys Lys
        35                  40                  45
Glu Arg Ser Cys Gly Gly Asn Ala Cys Gly Ser Tyr Val Pro Ser Cys
    50                  55                  60
Ser Asn Pro Cys Gly Ser Thr Glu Cys Asn Ser Gln Ser Pro Gln Val
65                  70                  75                  80
Lys Gly Cys Thr Ser Pro Asp Gly Arg Cys Lys Gln
                85                  90
```

        <210> 561
        <211> 76
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 561
```
Gln Asn Asn Phe Val Thr Leu Lys Asn Lys Asn Glu Gly Glu Met Lys
1               5                   10                  15
```

820

Leu Phe Tyr Phe Cys Asn Ile Ile Phe Leu Thr Ser Leu Phe Ser Val
                20   25   30
Ser Cys Thr His Thr Pro Pro Pro Arg Ser Tyr Ile Leu Ala Gln Gly
          35   40   45
Arg Thr Pro Leu Val Asn Lys Ala His Ser Leu Glu Phe Phe Leu Ala
    50   55   60
Arg Ser Val Phe Asn Thr Cys Tyr Asn Thr Asn Leu
65   70   75

<210> 562
<211> 523
<212> PRT
<213> Chlamydia pneumoniae

<400> 562
Arg Asn Ser Arg Phe Gln Gly Met Lys Ser Leu Trp Ser Lys Asp Lys
1   5   10   15
Arg Ile Met Asn Trp Glu Asn Val Arg Val Arg Val Ala Pro Ser Pro
                20   25   30
Thr Gly Asp Pro His Val Gly Thr Ala Tyr Met Ala Leu Phe Asn Glu
          35   40   45
Ile Phe Ala Lys Arg Phe Lys Gly Lys Met Ile Leu Arg Ile Glu Asp
    50   55   60
Thr Asp Arg Thr Arg Ser Arg Gln Asp Tyr Glu Glu Asn Ile Phe Ser
65   70   75   80
Ala Leu Arg Trp Cys Gly Ile Gln Trp Asp Glu Gly Pro Asp Val Gly
                85   90   95
Gly Pro Tyr Gly Pro Tyr Arg Gln Ser Glu Arg Thr Lys Ile Tyr Gln
                100   105   110
Gly Tyr Val Glu Thr Leu Leu Lys Thr Asp Cys Ala Tyr Lys Cys Phe
          115   120   125
Ala Thr Pro Gln Glu Leu Ala Glu Met Arg Ala Val Ala Ser Thr Leu
    130   135   140
Gly Tyr Arg Gly Gly Tyr Asp Arg Arg Tyr Arg Tyr Leu Ser Pro Glu
145   150   155   160
Glu Val Ala Ser Arg Glu Ala Ala Gly Gln Pro Tyr Thr Ile Arg Leu
                165   170   175
Lys Val Pro Leu Ser Gly Glu Cys Val Phe Glu Asp Tyr Ser Lys Gly
                180   185   190
Arg Val Val Phe Pro Trp Ala Asp Val Asp Asp Gln Val Leu Val Lys
          195   200   205
Ser Asp Gly Phe Pro Thr Tyr His Phe Ala Asn Val Ile Asp Asp His
    210   215   220
Leu Met Gly Ile Thr His Val Leu Arg Gly Glu Glu Trp Leu Ser Ser
225   230   235   240
Thr Pro Lys His Leu Leu Leu Tyr Glu Ala Phe Gly Trp Glu Pro Pro
                245   250   255
Val Phe Leu His Met Pro Leu Leu Leu Asn Pro Asp Gly Thr Lys Leu
                260   265   270
Ser Lys Arg Lys Asn Pro Thr Ser Ile Phe Tyr Tyr Arg Asp Ser Gly
          275   280   285
Tyr Val Lys Glu Ala Phe Val Asn Phe Leu Thr Leu Met Gly Tyr Ser
    290   295   300
Met Glu Gly Asp Glu Glu Val Tyr Ser Leu Glu Arg Ile Ile Glu Thr
305   310   315   320
Phe Asn Pro Arg Arg Ile Gly Lys Ser Gly Ala Val Phe Asp Ile Gln
                325   330   335
Lys Leu Asp Trp Met Asn Lys His Tyr Leu Asn His Glu Gly Ser Pro
                340   345   350
Glu Cys Leu Leu Lys Glu Leu Gln Gly Trp Leu Leu Asn Asp Glu Phe
          355   360   365

821

```
Phe Leu Lys Ile Leu Pro Leu Cys Gln Ser Arg Ile Thr Thr Leu Ala
    370             375             380
Glu Phe Ile Asn Leu Thr Ser Phe Phe Phe Ser Gly Leu Leu Glu Tyr
385             390             395             400
Arg Val Glu Glu Leu Leu Pro Gln Ala Leu Ser Pro Glu Lys Ala Ala
            405             410             415
Ile Leu Leu Tyr Ser Tyr Val Lys Tyr Leu Glu Lys Thr Asp Gln Trp
            420             425             430
Thr Lys Glu Thr Cys Tyr Leu Gly Ser Lys Trp Leu Ala Gln Ala Phe
    435             440             445
Asn Val His His Lys Lys Ala Ile Ile Pro Leu Leu Tyr Val Ala Ile
    450             455             460
Thr Gly Lys Lys Gln Gly Leu Pro Leu Phe Asp Ser Ile Glu Ile Leu
465             470             475             480
Gly Lys Pro Arg Ala Arg Ala Arg Leu Val Tyr Ala Glu Lys Leu Leu
            485             490             495
Gly Gly Val Pro Lys Lys Leu Ala Ala Thr Val Asp Lys Phe Met Gln
            500             505             510
Arg Glu Asp Phe Glu Glu Ala Thr Phe Asp Leu
    515             520
```

        <400> 563
```
Leu Met Ala Cys Glu Gln His Glu Gly Cys Tyr Glu Leu Glu Glu Arg
1               5               10              15
Glu Glu Ile Glu Asp Ile Lys Asp Ser Asp Thr Lys Trp Val Ser Ile
                20              25              30
Thr Gln Ala Ala Lys Leu His Asn Val Thr Arg Gln Ala Ile Tyr Val
        35              40              45
Ala Ile Lys Gln Lys Lys Leu Lys Ala Ser Lys Glu Thr Arg Trp Glu
    50              55              60
Ile Asp Ile Lys Asp Leu Glu Glu Tyr Lys Arg Asn Arg Tyr Ser Arg
65              70              75              80
Lys Lys Ser Leu Tyr Gln Gly Glu Leu Val Phe Asp Asn Gly Lys Gly
            85              90              95
Cys Tyr Ser Ile Asn Gln Val Ala Gln Ile Leu Gly Ile Pro Val Gln
            100             105             110
Lys Val Tyr Tyr Ala Thr Arg Thr Gly Thr Ile Arg Gly Glu Arg Lys
            115             120             125
Gly Ala Ala Trp Val Ile His Val Ser Glu Ile Glu Arg Tyr Lys Asn
    130             135             140
Glu Tyr Leu Ser Lys Gln Ala Ala Lys Lys Leu Lys Gly Ala Glu Pro
145             150             155             160
Lys Glu His Gln Ala Pro Asn Phe Glu Pro Pro Thr Glu Ile Phe Pro
            165             170             175
Glu Ser Asn
```

        <400> 564
```
Asn Tyr Lys Val Ile Met Ser Ile Ala Ile Ala Arg Glu Gln Tyr Ala
1               5               10              15
```

Ala Ile Leu Asp Met His Pro Lys Pro Ser Ile Ala Met Phe Ser Ser
20 25 30
Glu Gln Ala Arg Thr Ser Trp Glu Lys Arg Gln Ala His Pro Tyr Leu
35 40 45
Tyr Arg Leu Leu Glu Ile Ile Trp Gly Val Val Lys Phe Leu Leu Gly
50 55 60
Leu Ile Phe Phe Ile Pro Leu Gly Leu Phe Trp Val Leu Gln Lys Ile
65 70 75 80
Cys Gln Asn Phe Ile Leu Leu Gly Ala Gly Gly Trp Ile Phe Arg Pro
85 90 95
Ile Cys Arg Asp Ser Asn Leu Leu Arg Gln Ala Tyr Ala Ala Arg Leu
100 105 110
Phe Ser Ala Ser Phe Gln Asp His Val Ser Ser Val Arg Arg Val Cys
115 120 125
Leu Gln Tyr Asp Glu Val Phe Ile Asp Gly Leu Glu Leu Arg Leu Pro
130 135 140
Asn Ala Lys Pro Asp Arg Trp Met Leu Ile Ser Asn Gly Asn Ser Asp
145 150 155 160
Cys Leu Glu Tyr Arg Thr Val Leu Gln Gly Glu Lys Asp Trp Ile Phe
165 170 175
Arg Ile Ala Glu Glu Ser Gln Ser Asn Ile Leu Ile Phe Asn Tyr Pro
180 185 190
Gly Val Met Lys Ser Gln Gly Asn Ile Thr Arg Asn Asn Val Val Lys
195 200 205
Ser Tyr Gln Ala Cys Val Arg Tyr Leu Arg Asp Glu Pro Ala Gly Pro
210 215 220
Gln Ala Arg Gln Ile Val Ala Tyr Gly Tyr Ser Leu Gly Ala Ser Val
225 230 235 240
Gln Ala Glu Ala Leu Ser Lys Glu Ile Ala Asp Gly Ser Asp Ser Val
245 250 255
Arg Trp Phe Val Val Lys Asp Arg Gly Ala Arg Ser Thr Gly Ala Val
260 265 270
Ala Lys Gln Phe Ile Gly Ser Leu Gly Val Trp Leu Ala Asn Leu Thr
275 280 285
His Trp Asn Ile Asn Ser Glu Lys Arg Ser Lys Asp Leu His Cys Pro
290 295 300
Glu Leu Phe Ile Tyr Gly Lys Asp Ser Gln Gly Asn Leu Ile Gly Asp
305 310 315 320
Gly Leu Phe Lys Lys Glu Thr Cys Phe Ala Ala Pro Phe Leu Asp Pro
325 330 335
Lys Asn Leu Glu Glu Cys Ser Gly Lys Lys Ile Pro Val Ala Gln Thr
340 345 350
Gly Leu Arg His Asp His Ile Leu Ser Asp Asp Val Ile Lys Glu Val
355 360 365
Ala Gly His Ile Gln Arg His Phe Asp Asn
370 375

<210> 565
<211> 607
<212> PRT
<213> Chlamydia pneumoniae

<400> 565
Gln Tyr Lys Asn Leu Leu Trp Asp Phe Ser Pro Lys Gly Pro Cys Gly
1 5 10 15
Ile Lys Phe Met Thr Asn Ser Asp Asn Ala Ser Ala Ala Gly Leu Leu
20 25 30
Trp Ala His Pro Lys Glu Asp Pro Ala Phe Leu Gly Met Ile Ile Lys
35 40 45
Glu Phe His Leu Pro Pro Thr Val Ala Gln Ile Phe Ile Ser Arg Gly
50 55 60

823

Phe Gln Thr Ile Gln Glu Ile His Lys Phe Leu Tyr Ser His Leu Ser
65   70   75   80

Ser Leu Tyr Asp Pro Gly Leu Phe Leu Asp Met Ser Lys Ala Val Glu
            85   90   95

Arg Leu Leu Leu Ala Arg Asp Arg Lys Glu His Val Met Ile Tyr Gly
        100   105   110

Asp Ser Asp Val Asp Gly Met Thr Gly Val Ala Leu Leu Val Glu Phe
        115   120   125

Leu Arg Asp Ile Asp Val His Val Ser Tyr Phe Phe Leu Gly Ala Ile
        130   135   140

Leu Lys Gln His Gly Glu Thr Ser Thr Leu Ile Ala Lys Leu Lys Glu
145   150   155   160

Glu Gly Ile Thr Leu Leu Ile Thr Val Asp Cys Gly Ile Thr Ala Gly
                165   170   175

Lys Glu Val Ser Asp Ile Thr Arg Gln Gly Ile Asp Val Ile Ile Thr
            180   185   190

Asp His His Met Pro Thr Gly Lys Ile Pro His Cys Val Ala Thr Leu
        195   200   205

Asn Pro Lys Leu Arg Asp His Thr Tyr Pro Asn Arg Glu Leu Thr Gly
    210   215   220

Val Gly Val Ala Phe Lys Leu Ala Arg Gly Val Leu Asn Ala Leu Ile
225   230   235   240

Ser Arg Asn Leu Val Pro Lys Ser Gln Gly Ser Leu Lys Lys Leu Leu
            245   250   255

Asp Leu Val Thr Leu Gly Thr Ile Thr Asp Val Gly Val Leu Leu Gly
        260   265   270

Glu Asn Arg Val Met Val Arg Tyr Gly Ile Lys Glu Ile Ala Arg Gly
        275   280   285

Ala Arg Pro Gly Leu Asn Lys Leu Cys Ala Leu Cys Gly Val Glu Lys
    290   295   300

Ser Glu Val Thr Ser Thr Asp Ile Val Leu Lys Ile Ala Pro Lys Leu
305   310   315   320

Asn Ser Leu Gly Arg Leu Asp Asp Pro Ala Lys Gly Val Glu Leu Leu
            325   330   335

Leu Thr Gln Asp Asp Glu Arg Val Asp Ala Leu Ile Met Glu Leu Asp
        340   345   350

Asn Ile Asn Arg Glu Arg Gln Arg Ile Glu Ala Glu Val Phe Gln Asp
    355   360   365

Val Gln Glu Ile Leu Asn Ser Asn Pro Glu Ile Leu Lys Gln Ala Ala
370   375   380

Ile Val Leu Ser Ser Thr Ala Trp His Ala Arg Val Ile Pro Ile Ile
385   390   395   400

Ser Ala Arg Leu Ala Lys Thr Tyr Asn Lys Pro Val Val Ile Ile Ala
            405   410   415

Ile Gln Arg Gly Ile Gly Lys Gly Ser Ala Arg Thr Ile Gly Ser Phe
        420   425   430

Pro Leu Leu Gly Val Leu Lys Lys Cys Ser Ser Leu Leu Leu Ser Tyr
        435   440   445

Gly Gly His Asp Phe Ala Ala Gly Val Ile Met Lys Glu Asp Lys Val
    450   455   460

Glu Asp Phe Lys Lys Lys Phe Val His Leu Val Asn Ser Ser Leu Lys
465   470   475   480

Lys Gly Asp Thr Leu Pro His Leu Glu Ile Asp Ala Tyr Ala Asp Phe
            485   490   495

Asp Ala Ile Asp Tyr Asp Leu Leu Ala Ser Met Glu Leu Phe Glu Pro
        500   505   510

Phe Gly Lys Gly Asn Leu Met Pro Ile Phe Tyr Ser Lys Val Arg Gln
    515   520   525

Val Arg Tyr Pro Lys Val Leu Pro Gly Asn His Leu Lys Leu Tyr Leu
530   535   540

824

Ser Gln Lys Glu Arg Asn Leu Glu Gly Val Ala Phe Gly Leu Gly Arg
545   550   555   560
His Ala Asp Ala Leu Lys Ala Ser Trp His Tyr Pro Leu Glu Ile Ala
                565   570   575
Tyr Thr Pro Arg Leu Ser Gln Thr Ser Gly Ser Gly Val Ile His Leu
            580   585   590
Leu Val Arg Asp Phe Arg Ile Ser Ser Glu Pro Arg Phe Ser Asp
        595   600   605

        <210> 566
        <211> 1405
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 566
Ser Gly Ala Met Lys Gln Lys Val Lys Arg Asn Phe Ala Ile Ile Ile
1   5   10   15
Cys Val Phe Ala Leu Ala Leu Tyr Tyr Val Leu Pro Thr Cys Leu Tyr
            20   25   30
Tyr Ala Lys Pro Leu Asp Lys Lys Ile Asp Gly Asn Glu Ala Glu His
            35   40   45
Ile Ile Lys Ser Phe Thr Lys Gln Ala Gln Gln Val Arg Lys Asp Val
    50   55   60
Ile Pro Arg Val Ser Ala Ile Leu Ser Ser Leu His Leu Arg Gly His
65   70   75   80
Ile Gln Gln His Pro Ala Ile Pro Asp Ile Val Ser Val Arg Phe Lys
                85   90   95
Arg Gly Glu Asp Ala Glu Asp Phe Ile Gly Asn Leu Val His Gly Glu
            100   105   110
Pro Asn Val Pro Ile Lys Ser Ala Arg Leu His Val Val Gly Tyr Ser
        115   120   125
Arg Glu His Asp Asp His Val Ile Gln Val Ala Ser Ser Ile Asn Thr
    130   135   140
Ser Leu Val Glu Ser Asp Phe Ser Phe Val Ser Tyr Ser Ser Glu Asn
145   150   155   160
Glu Gln Glu Met Ala Ser Ser Ile Leu Gln Arg Val Tyr Ser Ala Cys
                165   170   175
Thr Phe Pro Lys Gln Lys Asp Cys Ser Cys Ser Tyr Pro Ser Ile Trp
            180   185   190
Glu Thr Ala Pro Lys Glu Gln Leu Leu Gln Tyr Ala Lys Asn Leu Ser
            195   200   205
Ser Gly Phe Glu Val Phe Ser Ser Arg Leu Ser Ala Phe Cys Gln Gln
        210   215   220
Ser Phe Ser Ser Asn Gln Asp Arg Leu Ala Phe Leu Ser Arg Leu Ser
225   230   235   240
Ser Leu Ser Asn Asp Ala Ala Ile Asp Val Glu Asp Gln Lys Leu Leu
                245   250   255
Lys Ser Val Tyr Glu Thr Leu Ser Gln Thr Ala Cys Ile Arg Ser Leu
            260   265   270
Asp Cys Pro Tyr Ile Glu Gly Leu Arg Leu Asp Cys Ser Glu Ser Ser
        275   280   285
Leu Phe Phe Ser Ser Ile Glu Tyr Cys Pro Lys Glu Arg Lys Ile Phe
    290   295   300
Leu Thr Leu His Ser Asp Leu Leu Ala Gln Arg Thr Ser Leu Ser Lys
305   310   315   320
Glu Gln Arg Leu Asp Phe Asp Ser Arg Leu Ala Val Glu Lys Gln Lys
                325   330   335
Leu Ser Lys Asn Leu Thr Val Gln Val Glu Asp Tyr Asn Asn Gly Phe
            340   345   350
Ser Phe Gln Trp Met Asp Lys Asp Thr Gln Gly Lys Ile Ile Leu Gln
    355   360   365

825

```
Gly Glu Arg Leu Leu Gln Gly Ile Ala Glu His Leu Thr Ala Leu Thr
    370               375           380
Leu His Arg Pro Ala Ala Glu Ser Cys Asp Leu Ile Pro Glu Asn Phe
385               390               395               400
Pro Val Phe Cys Arg Gln Pro Arg Glu Ser Glu Ala Phe Gly Cys Tyr
              405               410               415
Ile Phe Ser Pro Asn Thr Asp Cys Lys His Phe Ser Lys Gly Ser Val
              420               425               430
Tyr Ile Leu Leu Lys Gly Leu Arg Ser Ile Val Ala Lys Tyr Gln Gln
        435               440               445
Gly Gly Gly Lys Glu Leu Gln Ser Phe Glu Lys Asp Leu Gln Asn Leu
    450               455               460
Tyr Asn Cys Phe Ser His Thr Glu Ala Ile Ser Trp Thr Leu Gly Glu
465               470               475               480
Asp Gln Val Leu Glu Ile Arg His Pro Leu Gln Gln Phe Leu Asp Val
              485               490               495
Trp Gly Glu Gly Phe Val Ile Gly Lys Glu Gly Cys Ala Phe Leu Glu
            500               505               510
Val Lys Asp Ile Gln Asp Arg Leu Ala Thr Val Asn Gln Ile Glu Lys
        515               520               525
Asn Arg Gln Ser Asp Leu Val Arg Trp His Glu Gln Tyr Arg His Ala
    530               535               540
Lys Cys Ser Met Asp Leu Gln Glu Arg Leu Ser Ala Pro Ile Pro Tyr
545               550               555               560
Gln Asn Leu Phe Leu Glu Asn Met Lys Leu Asn Met Arg Lys Phe Ser
              565               570               575
Arg Gly Glu Asn Ile Leu Arg Leu Gly Ile Asp Phe Val Gly Gly Arg
              580               585               590
Gln Leu Leu Leu Ser Phe Lys Asp His Gln Gly Lys Gln Leu Thr Asp
    595               600               605
Lys Glu Asp Ile Leu Lys Val Ser Asp Glu Leu Cys Ala Arg Leu Asn
    610               615               620
Lys Leu Gly Val Ser Glu Ile Glu Leu Arg Arg Glu Gly Asp Tyr Ile
625               630               635               640
His Leu Ser Val Pro Gly Ser Ser Thr Ile Ser Ser Ser Glu Ile Leu
              645               650               655
Gly Thr Ser Lys Met Ser Phe His Val Val Asn Glu Arg Phe Ser Ser
              660               665               670
Tyr Ser Ala Ser Arg Tyr Glu Val Gln Arg Phe Leu Asp Tyr Leu Trp
    675               680               685
Phe Thr Ser Gln Ala Gln Gly Lys Thr Ser Pro Glu Glu Ile Asn Thr
    690               695               700
Phe Ala Ser Ala Leu Phe Asn Glu Glu Val Asp Val Pro Pro Ser Val
705               710               715               720
His Glu Ala Ile Thr Lys Leu Lys Ser Glu Gly Leu Ala Phe Ser Pro
              725               730               735
Ser Gly Cys Glu Thr Pro Ser Thr Asp Leu Asp Thr Thr Phe Ser Met
              740               745               750
Ile Ala Ile Gly Lys Asp Ala Glu Gln Lys Ala Asn Pro Leu Val Ile
        755               760               765
Val Phe Arg Asn Tyr Ala Leu Asp Gly Ala Ser Leu Lys Asp Ile Arg
    770               775               780
Pro Glu Phe Ala Ala Gly Glu Gly Tyr Val Leu Asn Phe Ser Val Lys
785               790               795               800
Asp Thr Ser Pro Lys Lys Met Ala Glu Lys Leu Ser Pro Thr Glu Ser
              805               810               815
Phe His Thr Trp Thr Ser Ala Tyr Cys Gln Glu Gly Ile Ser Gly Thr
              820               825               830
Ala Asn Gly Gln Tyr Ser Ala Asn Arg Gly Trp Arg Met Ala Val Val
    835               840               845
```

```
Ile Asp Gly Tyr Met Val Ser Ser Pro Ile Leu Asn Val Pro Leu Lys
    850                 855                 860
Asn His Ala Ser Val Ser Gly Lys Phe Thr His Arg Glu Val Ser Lys
865                 870                 875                 880
Leu Ala Ser Asp Leu Lys Ser Gly Ala Met Ser Phe Val Pro Glu Val
                885                 890                 895
Leu Ser Glu Glu Thr Ile Ser Ser Asp Leu Gly Lys Lys Gln Cys Thr
            900                 905                 910
Gln Gly Ile Ile Ser Ala Cys Cys Gly Leu Ala Met Leu Ile Val Leu
        915                 920                 925
Met Ser Val Tyr Tyr Arg Phe Gly Gly Val Ile Ala Ser Gly Ala Val
    930                 935                 940
Leu Leu Asn Leu Leu Leu Ile Trp Ala Ala Leu Gln Tyr Leu Asp Ala
945                 950                 955                 960
Pro Leu Thr Leu Ser Gly Leu Ala Gly Ile Val Leu Ala Met Gly Met
                965                 970                 975
Ala Val Asp Ala Asn Val Leu Val Phe Glu Arg Ile Arg Glu Glu Phe
            980                 985                 990
Leu Leu Ser Gln Ser Leu Lys Lys Ser Val Glu Lys Gly Tyr Thr Lys
        995                 1000                1005
Ala Phe Gly Ala Ile Phe Asp Ser Asn Leu Thr Thr Val Leu Ala Ser
    1010                1015                1020
Ala Leu Leu Phe Phe Leu Asp Thr Gly Pro Ile Lys Gly Phe Ala Leu
1025                1030                1035                1040
Thr Leu Ile Leu Gly Ile Phe Ser Ser Met Phe Thr Ala Leu Phe Met
                1045                1050                1055
Thr Lys Phe Phe Phe Met Leu Trp Met Asn Lys Thr Gln His Thr Gln
        1060                1065                1070
Leu His Met Met Asn Lys Phe Val Gly Ile Lys His Asp Phe Leu Arg
    1075                1080                1085
Gly Cys Lys Lys Leu Trp Ala Val Ser Gly Ser Val Phe Leu Leu Gly
    1090                1095                1100
Cys Val Ala Leu Gly Phe Gly Ala Trp Asn Ser Val Leu Gly Met Asp
1105                1110                1115                1120
Phe Lys Gly Gly Tyr Ala Phe Thr Phe Asn Pro Lys Glu His Gly Ile
                1125                1130                1135
Ser Asp Val Ala Gln Met Arg Gly Lys Val Val His Lys Leu Gln Glu
        1140                1145                1150
Ala Gly Leu Ser Ser Arg Asp Phe Arg Ile Gln Thr Phe Gly Ser Ser
        1155                1160                1165
Glu Lys Ile Lys Ile Tyr Phe Ser Asp Lys Ala Leu Ser Tyr Thr Lys
    1170                1175                1180
Ala Asp Thr Ser Leu Ser Pro Lys Ile Asn Asp His Glu Leu Ala Leu
1185                1190                1195                1200
Ala Val Gly Leu Leu Ser Glu Thr Gly Leu Asp Phe Ser Thr Glu Thr
                1205                1210                1215
Leu Asn Glu Thr Gln Asn Phe Trp Ser Lys Val Ser Ser Lys Leu Ser
            1220                1225                1230
Lys Lys Met Arg Tyr Gln Ala Thr Ile Gly Leu Leu Gly Ala Leu Ala
        1235                1240                1245
Ile Ile Leu Leu Tyr Val Ser Leu Arg Phe Glu Trp Gln Tyr Ala Phe
    1250                1255                1260
Ser Ala Val Cys Ala Leu Ile His Asp Leu Leu Ala Thr Cys Ala Val
1265                1270                1275                1280
Leu Phe Ile Ala His Phe Phe Leu Lys Lys Ile Gln Ile Asp Leu Gln
                1285                1290                1295
Ala Ile Gly Ala Leu Met Thr Val Leu Gly Tyr Ser Leu Asn Asn Thr
        1300                1305                1310
Leu Ile Ile Phe Asp Arg Ile Arg Glu Asp Arg Gln Ala Asn Leu Phe
    1315                1320                1325
```

Thr Pro Met His Val Leu Val Asn Asp Ala Leu Gln Lys Thr Phe Ser
     1330   1335   1340
Arg Thr Val Met Thr Thr Ala Thr Thr Leu Ser Val Leu Leu Met Leu
1345   1350   1355   1360
Leu Phe Ile Gly Gly Ser Ser Val Phe Asn Phe Ala Phe Ile Met Thr
                    1365   1370   1375
Ile Gly Ile Leu Leu Gly Thr Leu Ser Ser Leu Tyr Ile Ala Pro Pro
                    1380   1385   1390
Leu Leu Leu Phe Met Val Arg Lys Glu Asn Arg Ser Lys
          1395   1400   1405

        <210> 567
        <211> 403
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 567
Asn Lys Leu Phe Cys Phe Leu Ile Phe Cys Phe Val Asn Ile Ser Ala
1   5   10   15
Ile Leu Phe Asp Ser Ser Phe Leu Leu Lys Ile Lys Arg Asn Ser Lys
          20   25   30
Arg Met Leu Arg Ser Met Lys Phe Pro Arg Ile Ser Ile Ser Asp Leu
          35   40   45
Ile Pro Thr Gln Met Val Ile Trp Trp Arg Gly Gly Gly Asn Val His
          50   55   60
Tyr Val Pro Asn Ala Gln Asn Leu Pro Lys Lys Ile Leu Gly Gly Val
65   70   75   80
Leu Ala Cys Phe Gly Leu Ala Leu Leu Gly Cys Ala Ala Phe Ala Ala
               85   90   95
Gly Val Cys Gln Thr Ile Phe Pro Cys Ile Gly Leu Met Ile Leu Gly
               100   105   110
Leu Val Leu Leu Gly Phe Ala Tyr Leu Gln Tyr Ser Lys Gly Trp Ser
          115   120   125
Arg Phe Glu Arg Pro Leu Phe Arg Glu Thr Lys Val Phe Glu Lys Pro
          130   135   140
Ile Asn Trp Leu Gly Cys Leu Ser Leu Leu Gln Ser Trp Lys Lys Ile
145   150   155   160
Arg Pro Gly Cys Tyr Tyr His Pro Gly Cys Pro Gln Val Glu Ile Cys
               165   170   175
Glu Gly Ser Gln Glu Ile Val Thr Lys Ile Phe Gln Lys Lys Ser Asp
          180   185   190
Arg Asn Thr Ser Ile Phe Leu Ile Gln Glu Met Asp Gln Ile Ala Leu
          195   200   205
Arg Gln Gly Ile Glu Lys Ser Ser Leu Ser Arg Lys Thr Phe Ala Ile
          210   215   220
Asp Pro Ser Val Val Ser Ser Leu Leu Ser Glu Ile Gln Arg Glu Glu
225   230   235   240
Gln Gln Tyr Leu Asp Pro Lys Val Ile Ser Trp Ser Ser Glu Asp Gln
               245   250   255
Ala Ser Asp Arg Thr His Pro Lys Ser Ala Ile Tyr Val Asn Ile Ser
          260   265   270
Asp Ala Ala Gln Glu Pro Gln Gly Arg Cys Tyr Ile Asp Ala Tyr Thr
          275   280   285
Lys Ala Phe Phe Thr Val Leu Asp Gln Ile Gly Asp Pro Asn Ile Val
          290   295   300
Lys Lys His Thr Ile Tyr Val Leu Thr Pro Ile Leu Gly Val Pro Asp
305   310   315   320
Ala Leu Pro Lys Glu Glu Gln Glu Asn Leu Lys Leu Leu Ser Gln Ala
               325   330   335
Ala Phe Leu Tyr Ser Ala Glu Gln Val Ala Lys Arg Met Arg Glu Glu
          340   345   350

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Lys Gln Asp Ser Ile Arg Ile Lys Phe Ile Phe Thr Asp Pro Thr Ser
        355   360   365
Pro Thr Ser Leu Tyr Phe Ser Pro His His Ser Ser Thr Pro His Ser
        370   375   380
Val Thr Pro Ile Ser Leu Ser Gly Phe Val Gly Glu Gln Glu Ser Tyr
385   390   395   400
Thr Phe Ala

<210> 568
<211> 264
<212> PRT
<213> Chlamydia pneumoniae

<400> 568
Glu Arg Ile Val Thr Tyr Ala Leu Ile Asn Asp Pro Val Asp Leu Ser
1   5   10   15
Leu Ala Thr Asn Asn Ala Glu Ser Lys Phe Pro Ser Leu Gln Arg Leu
        20   25   30
Pro Asn His Val Ala Ile Ile Met Asp Gly Asn Arg Arg Trp Tyr Lys
        35   40   45
Lys His Arg Glu Glu Cys Gly His Thr His Thr Ser Gly His Tyr Tyr
        50   55   60
Gly Ala Lys Val Leu Pro Asn Ile Leu Asn Ala Val Leu Asp Leu Gly
65   70   75   80
Ile Lys Val Leu Thr Leu Tyr Thr Phe Ser Thr Glu Asn Phe Gly Arg
                85   90   95
Pro Lys Glu Glu Ile Gln Glu Ile Phe Asn Ile Phe Tyr Thr Gln Leu
                100   105   110
Asp Lys Gln Leu Pro Tyr Leu Met Glu Asn Glu Ile Cys Leu Arg Cys
        115   120   125
Ile Gly Asp Leu Ser Lys Leu Pro Lys Gly Ile Gln Thr Lys Ile Asn
        130   135   140
His Val Ser Arg Met Thr Ala Ser Phe Ser Arg Leu Glu Leu Val Leu
145   150   155   160
Ala Val Asn Tyr Gly Gly Lys Asp Glu Leu Val Arg Ala Phe Lys Lys
                165   170   175
Leu His Val Asp Ile Leu Asn Lys Lys Ile Ser Ser Asp Asp Leu Ser
                180   185   190
Glu Ser Leu Ile Ser Ser Tyr Leu Asp Thr Ser Gly Leu Thr Asp Pro
        195   200   205
Asp Leu Leu Ile Arg Thr Gly Gly Glu Met Arg Val Ser Asn Phe Leu
        210   215   220
Leu Trp Gln Ile Ala Tyr Thr Glu Leu Tyr Ile Thr Asp Thr Leu Trp
225   230   235   240
Pro Asp Phe Thr Pro Gln Asp Leu Phe Glu Ala Ile Asn Val Tyr Gln
                245   250   255
Gln Arg Ser Arg Arg Gly Gly Lys
                260

<210> 569
<211> 308
<212> PRT
<213> Chlamydia pneumoniae

<400> 569
Val Leu Asn Ser Asn Lys Phe Lys Ser Lys Thr Gly Ala Tyr Gly Asp
1   5   10   15
Leu Phe Gln Arg Val Val Val His Ser Leu Val Leu Thr Phe Leu Val
        20   25   30

829

Leu Leu Leu Tyr Ser Ser Leu Phe Pro Leu Thr Ser Phe Ala Leu Gly
              35   40   45
Phe Ile Thr Ala Thr Cys Gly Ala Val Gly Thr Tyr Glu Tyr Ser Ser
    50   55   60
Met Ala Lys Ala Lys Met His Tyr Pro Leu Ser Thr Phe Ser Ala Ile
65   70   75   80
Gly Ser Phe Leu Phe Leu Ala Leu Ser Phe Leu Ser Ile Arg Trp Gly
              85   90   95
His Ser Leu Pro Gly Phe Phe Asp Ala Leu Pro Trp Thr Leu Leu Ile
              100   105   110
Val Trp Val Val Trp Ser Ile Phe Arg Val Arg Lys Ser Thr Ile Gly
        115   120   125
Ala Leu Gln Leu Ser Gly Val Thr Leu Phe Ser Ile Leu Tyr Val Gly
    130   135   140
Ile Pro Ile Arg Leu Phe Leu His Val Leu Tyr Ser Phe Ile His Thr
145   150   155   160
Gln Glu Pro Tyr Leu Gly Ile Trp Trp Ala Ser Phe Leu Ile Ala Thr
              165   170   175
Thr Lys Gly Ala Asp Ile Phe Gly Tyr Phe Phe Gly Lys Ala Phe Gly
              180   185   190
Asn Lys Lys Ile Ala Pro Gln Ile Ser Pro Asn Lys Thr Val Val Gly
        195   200   205
Phe Val Ala Gly Cys Leu Gly Ala Thr Leu Ile Ser Phe Ile Phe Phe
    210   215   220
Leu Gln Ile Pro Thr Arg Phe Ala Ser Tyr Phe Pro Met Pro Ala Ile
225   230   235   240
Leu Ile Pro Leu Gly Leu Ala Leu Gly Ile Thr Gly Phe Phe Gly Asp
              245   250   255
Ile Ile Glu Ser Ile Phe Lys Arg Asp Ala His Leu Lys Asn Ser Asn
              260   265   270
Lys Leu Lys Ala Val Gly Gly Met Leu Asp Thr Leu Asp Ser Leu Leu
        275   280   285
Leu Ser Thr Pro Ile Ala Tyr Leu Phe Leu Leu Ile Thr Gln Ser Lys
    290   295   300
Glu Phe Ile Gly
305

        <210> 570
        <211> 220
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 570
Arg Val Tyr Trp Met Ile Ile Thr Ile Asp Gly Pro Ser Gly Thr Gly
    1   5   10   15
Lys Ser Thr Thr Ala Lys Ala Leu Ala Asp His Leu His Phe Asn Tyr
              20   25   30
Cys Asn Thr Gly Lys Met Tyr Arg Thr Leu Ala Tyr Ala Arg Leu Gln
        35   40   45
Ser Pro Trp Ala Thr Leu Pro Leu Thr Lys Phe Leu Glu Glu Pro Pro
    50   55   60
Phe Ser Phe Thr Phe Ala Thr Gly Gln Pro Leu Glu Ser Phe Phe Asn
65   70   75   80
Gly His Leu Leu Thr Ser Glu Leu Thr Thr Gln Glu Val Ala Asn Ala
              85   90   95
Ala Ser Glu Leu Ser Gln Leu Pro Glu Val Arg Ala Phe Met Gln Asp
        100   105   110
Leu Gln Arg Arg Tyr Ala Gln Leu Gly Asn Cys Val Phe Glu Gly Arg
        115   120   125
Asp Met Gly Ser Lys Val Phe Pro Asn Ala Asp Leu Lys Ile Phe Leu
    130   135   140

830

```
Thr Ser Ser Pro Glu Val Arg Ala Gln Arg Arg Leu Lys Asp Leu Pro
145                 150                 155                 160
Glu Gly Thr Leu Ser Pro Glu Gln Leu Gln Ala Glu Leu Val Lys Arg
                165                 170                 175
Asp Ala Ala Asp Ala Gln Arg Ala His Asp Pro Leu Val Ile Pro Glu
            180                 185                 190
Asn Gly Ile Val Ile Asp Ser Ser Asp Leu Thr Ile Arg Gln Val Leu
        195                 200                 205
Glu Lys Ile Leu Ala Leu Leu Phe Arg Asn Glu Leu
    210                 215                 220
```

        <210> 571
        <211> 234
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 571

```
Leu Phe Gly Phe Asp Asn Lys Thr Ser Ser Gly Glu Asn Phe Ser Phe
1               5                   10                  15
Thr Ile Ser Lys Arg Ala Met Ile Phe Arg Ile Cys Lys Phe Phe Thr
            20                  25                  30
Trp Val Ala Phe Ser Leu Phe Tyr Lys Leu Lys Val Tyr Gly Val Lys
        35                  40                  45
Lys Asn Phe Ile Lys Gly Pro Ala Ile Ile Ala Val Asn His Asn Ser
    50                  55                  60
Phe Leu Asp Pro Ile Ala Leu His Met Cys Val His Glu Cys Ile Tyr
65                  70                  75                  80
His Leu Ala Arg Ala Ser Leu Phe Asn Ile Pro Trp Leu Trp Lys Gln
            85                  90                  95
Trp Gly Cys Phe Pro Val Arg Gln Asp Glu Gly Asn Ser Ala Ala Phe
            100                 105                 110
Lys Ile Ala Ser Arg Leu Phe Asn Lys Arg Lys Lys Leu Val Ile Tyr
        115                 120                 125
Pro Glu Gly Ala Arg Ser Pro Asp Gly Gln Leu Gln Pro Gly Lys Val
    130                 135                 140
Gly Ile Gly Met Met Ala Ala Lys Ser Arg Val Pro Ile Ile Pro Val
145                 150                 155                 160
Tyr Ile Arg Gly Thr Phe Glu Ala Phe Asn Arg His Gln Lys Ile Pro
                165                 170                 175
His Val Trp Lys Thr Ile Thr Cys Val Phe Gly Thr Pro Met Tyr Phe
            180                 185                 190
Asp Asp Ile Ile Gln Asn Pro Glu Ile Lys Asn Lys Glu Thr Tyr Gln
        195                 200                 205
Ile Ile Thr Asn Gln Thr Met Asn Lys Ile Ala Glu Leu Lys Ala Trp
    210                 215                 220
Tyr Glu Ser Gly Cys Lys Gly Asp Val Pro
225                 230
```

        <210> 572
        <211> 582
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 572

```
Thr Lys Leu Pro Ser Ser Lys His Gly Met Asn Arg Gly Ala Lys Glu
1               5                   10                  15
Thr Ser Pro Lys Leu Met Ser Thr Leu Leu Ser Ile Leu Ser Val Ile
            20                  25                  30
Cys Ser Gln Ala Ile Ala Lys Ala Phe Pro Asn Leu Glu Asp Trp Ala
        35                  40                  45
```

831

```
Pro Glu Ile Thr Pro Ser Thr Lys Glu His Phe Gly His Tyr Gln Cys
    50              55              60
Asn Asp Ala Met Lys Leu Ala Arg Val Leu Lys Lys Ala Pro Arg Ala
65              70              75              80
Ile Ala Glu Ala Ile Val Ala Glu Leu Pro Gln Glu Pro Phe Ser Leu
            85              90              95
Ile Glu Ile Ala Gly Ala Gly Phe Ile Asn Phe Thr Phe Ser Pro Val
            100             105             110
Phe Leu Asn Gln Gln Leu Glu His Phe Lys Asp Ala Leu Lys Leu Gly
        115             120             125
Phe Gln Val Ser Gln Pro Lys Lys Ile Ile Ile Asp Phe Ser Ser Pro
    130             135             140
Asn Ile Ala Lys Asp Met His Val Gly His Leu Arg Ser Thr Ile Ile
145             150             155             160
Gly Asp Ser Leu Ala Arg Ile Phe Ser Tyr Val Gly His Asp Val Leu
            165             170             175
Arg Leu Asn His Ile Gly Asp Trp Gly Thr Ala Phe Gly Met Leu Ile
            180             185             190
Thr Tyr Leu Gln Glu Asn Pro Cys Asp Tyr Ser Asp Leu Glu Asp Leu
    195             200             205
Thr Ser Leu Tyr Lys Lys Ala Tyr Val Cys Phe Thr Asn Asp Glu Glu
    210             215             220
Phe Lys Lys Arg Ser Gln Gln Asn Val Val Ala Leu Gln Ala Lys Asp
225             230             235             240
Pro Gln Ala Ile Ala Ile Trp Glu Lys Ile Cys Glu Thr Ser Glu Lys
            245             250             255
Ala Phe Gln Lys Ile Tyr Asp Ile Leu Asp Ile Val Val Glu Lys Arg
        260             265             270
Gly Glu Ser Phe Tyr Asn Pro Phe Leu Pro Glu Ile Ile Glu Asp Leu
    275             280             285
Glu Lys Lys Gly Leu Leu Thr Val Ser Asn Asp Ala Lys Cys Val Phe
    290             295             300
His Glu Ala Phe Ser Ile Pro Phe Met Val Gln Lys Ser Asp Gly Gly
305             310             315             320
Tyr Asn Tyr Ala Thr Thr Asp Leu Ala Ala Met Arg Tyr Arg Ile Glu
            325             330             335
Glu Asp His Ala Asp Lys Ile Ile Ile Val Thr Asp Leu Gly Gln Ser
        340             345             350
Leu His Phe Gln Leu Leu Glu Ala Thr Ala Ile Ala Ala Gly Tyr Leu
    355             360             365
Gln Pro Gly Ile Phe Ser His Val Gly Phe Gly Leu Val Leu Asp Pro
    370             375             380
Gln Gly Lys Lys Leu Lys Thr Arg Ser Gly Glu Asn Val Lys Leu Arg
385             390             395             400
Glu Leu Leu Asp Thr Ala Ile Glu Lys Ala Glu Glu Ala Leu Arg Glu
            405             410             415
His Arg Pro Glu Leu Thr Asp Glu Ala Ile Gln Glu Arg Ala Pro Val
            420             425             430
Ile Gly Ile Asn Ala Ile Lys Tyr Ser Asp Leu Ser Ser His Arg Thr
        435             440             445
Ser Asp Tyr Val Phe Ser Phe Glu Lys Met Leu Arg Phe Glu Gly Asn
    450             455             460
Thr Ala Met Phe Leu Leu Tyr Ala Tyr Val Arg Ile Gln Gly Ile Lys
465             470             475             480
Arg Arg Leu Gly Ile Ser Gln Leu Ser Leu Glu Gly Pro Pro Glu Ile
            485             490             495
Gln Glu Pro Ala Glu Glu Leu Leu Ala Leu Thr Leu Leu Arg Phe Pro
            500             505             510
Glu Ala Leu Glu Ser Thr Ile Lys Glu Leu Cys Pro His Phe Leu Thr
            515             520             525
```

832

Asp Tyr Leu Tyr Asn Leu Thr His Lys Phe Asn Gly Phe Phe Arg Asp
    530   535   540

Ser His Ile Gln Asp Ser Pro Tyr Ala Lys Ser Arg Leu Phe Leu Cys
545   550   555   560

Ala Leu Ala Glu Gln Val Leu Ala Thr Gly Met His Leu Leu Gly Leu
               565   570   575

Lys Thr Leu Glu Arg Leu
         580

<210> 573
<211> 477
<212> PRT
<213> Chlamydia pneumoniae

<400> 573
Thr Phe Glu Lys Val Asn Val Ser Phe Ser Asp Phe Asp Ala Lys Gly
1   5   10   15

Glu Arg Arg Met Gln Ile Ala Gln Val Phe Gly Cys Gly Arg Leu Asn
        20   25   30

Gly Glu Val Lys Val Ser Gly Ala Lys Asn Ala Ala Thr Lys Leu Leu
        35   40   45

Val Ala Ser Leu Leu Ser Asp Gln Lys Cys Thr Leu Arg Asn Val Pro
50   55   60

Asp Ile Gly Asp Val Ser Leu Thr Val Glu Leu Cys Lys Ser Leu Gly
65   70   75   80

Ala His Val Ser Trp Asp Lys Glu Thr Glu Val Leu Glu Ile Tyr Thr
             85   90   95

Pro Glu Ile Gln Cys Thr Arg Val Pro Pro Thr Phe Ser Asn Val Asn
        100   105   110

Arg Ile Pro Ile Leu Leu Leu Gly Ala Leu Leu Gly Arg Cys Pro Glu
        115   120   125

Gly Val Tyr Val Pro Thr Val Gly Gly Asp Ala Ile Gly Glu Arg Thr
130   135   140

Leu Asn Phe His Phe Glu Gly Leu Lys Gln Leu Gly Val Gln Ile Ser
145   150   155   160

Ser Asp Ser Ser Gly Tyr Tyr Ala Lys Ala Pro Arg Gly Leu Lys Gly
             165   170   175

Asn Tyr Ile His Leu Pro Tyr Pro Ser Val Gly Ala Thr Glu Asn Leu
        180   185   190

Ile Leu Ala Ala Ile His Ala Lys Gly Arg Thr Val Ile Lys Asn Val
        195   200   205

Ala Leu Glu Ala Glu Ile Leu Asp Leu Val Leu Phe Leu Gln Lys Ala
210   215   220

Gly Ala Asp Ile Thr Thr Asp Asn Asp Arg Thr Ile Asp Ile Phe Gly
225   230   235   240

Thr Gly Gly Leu Gly Ser Val Asp His Thr Ile Leu Pro Asp Lys Ile
             245   250   255

Glu Ala Ala Ser Phe Gly Met Ala Ala Val Val Ser Gly Gly Arg Val
        260   265   270

Phe Val Arg Asn Ala Lys Gln Glu Leu Leu Ile Pro Phe Leu Lys Met
        275   280   285

Leu Arg Ser Ile Gly Gly Gly Phe Leu Val Ser Glu Ser Gly Ile Glu
        290   295   300

Phe Phe Gln Glu Arg Pro Leu Val Gly Gly Val Val Leu Glu Thr Asp
305   310   315   320

Val His Pro Gly Phe Leu Thr Asp Trp Gln Gln Pro Phe Ala Val Leu
             325   330   335

Leu Ser Gln Ala Gln Gly Ser Ser Val Ile His Glu Thr Val His Glu
        340   345   350

Asn Arg Leu Gly Tyr Leu His Gly Leu Gln His Met Gly Ala Glu Cys
        355   360   365

```
Gln Leu Phe His Gln Cys Leu Ser Thr Lys Ala Cys Arg Tyr Ala Ile
    370                 375                 380
Gly Asn Phe Pro His Ser Ala Val Ile His Gly Ala Thr Pro Leu Trp
385                 390                 395                 400
Ala Ser His Leu Val Ile Pro Asp Leu Arg Ala Gly Phe Ala Tyr Val
                405                 410                 415
Met Ala Ala Leu Ile Ala Glu Gly Gly Gly Ser Ile Ile Glu Asn Thr
            420                 425                 430
His Leu Leu Asp Arg Gly Tyr Thr Asn Trp Val Gly Lys Leu Arg Ser
        435                 440                 445
Leu Gly Ala Lys Ile Gln Ile Phe Asp Met Glu Gln Glu Glu Leu Thr
    450                 455                 460
Thr Ser Pro Lys Ser Leu Ala Leu Arg Asp Ala Ser Leu
465                 470                 475


        <210> 574
        <211> 756
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 574
Ile Met Ala Ala Pro Ile Asn Gln Pro Ser Thr Thr Thr Gln Ile Thr
1               5                   10                  15
Gln Thr Gly Gln Thr Thr Thr Thr Thr Val Gly Ser Leu Gly Glu
            20                  25                  30
His Ser Val Thr Thr Thr Gly Ser Gly Ala Ala Ala Gln Thr Ser Gln
        35                  40                  45
Thr Val Thr Leu Ile Ala Asp His Glu Met Gln Glu Ile Ala Ser Gln
    50                  55                  60
Asp Gly Ser Ala Val Ser Phe Ser Ala Glu His Ser Phe Ser Thr Leu
65                  70                  75                  80
Pro Pro Glu Thr Gly Ser Val Gly Ala Thr Ala Gln Ser Ala Gln Ser
                85                  90                  95
Ala Gly Leu Phe Ser Leu Ser Gly Arg Thr Gln Arg Arg Asp Ser Glu
            100                 105                 110
Ile Ser Ser Ser Ser Asp Gly Ser Ser Ile Ser Arg Thr Ser Ser Asn
        115                 120                 125
Ala Ser Ser Gly Glu Thr Ser Arg Ala Glu Ser Ser Pro Asp Leu Gly
    130                 135                 140
Asp Leu Asp Ser Leu Ser Gly Ser Glu Arg Ala Glu Gly Ala Glu Gly
145                 150                 155                 160
Pro Glu Gly Pro Gly Gly Leu Pro Glu Ser Thr Ile Pro His Tyr Asp
                165                 170                 175
Pro Thr Asp Lys Ala Ser Ile Leu Asn Phe Leu Lys Asn Pro Ala Val
            180                 185                 190
Gln Gln Lys Met Gln Thr Lys Gly Gly His Phe Val Tyr Val Asp Glu
        195                 200                 205
Ala Arg Ser Ser Phe Ile Phe Val Arg Asn Gly Asp Trp Ser Thr Ala
    210                 215                 220
Glu Ser Ile Lys Val Ser Asn Ala Lys Thr Lys Glu Asn Ile Thr Lys
225                 230                 235                 240
Pro Ala Asp Leu Glu Met Cys Ile Ala Lys Phe Cys Val Gly Tyr Glu
                245                 250                 255
Thr Ile His Ser Asp Trp Thr Gly Arg Val Lys Pro Thr Met Glu Glu
            260                 265                 270
Arg Ser Gly Ala Thr Gly Asn Tyr Asn His Leu Met Leu Ser Met Lys
        275                 280                 285
Phe Lys Thr Ala Val Val Tyr Gly Pro Trp Asn Ala Lys Glu Ser Ser
    290                 295                 300
Ser Gly Tyr Thr Pro Ser Ala Trp Arg Arg Gly Ala Lys Val Glu Thr
305                 310                 315                 320
```

834

```
Gly Pro Ile Trp Asp Asp Val Gly Gly Leu Lys Gly Ile Asn Trp Lys
            325                     330                     335
Thr Thr Pro Ala Pro Asp Phe Ser Phe Ile Asn Glu Thr Pro Gly Gly
            340                     345                 350
Gly Ala His Ser Thr Ser His Thr Gly Pro Gly Thr Pro Val Gly Ala
            355                 360                 365
Thr Val Val Pro Asn Val Asn Val Asn Leu Gly Gly Ile Lys Val Asp
            370                 375                 380
Leu Gly Gly Ile Asn Leu Gly Gly Ile Thr Thr Asn Val Thr Thr Glu
385                     390                     395                 400
Glu Gly Gly Gly Thr Asn Ile Thr Ser Thr Lys Ser Thr Ser Thr Asp
                405                     410                 415
Asp Lys Val Ser Ile Thr Ser Thr Gly Ser Gln Ser Thr Ile Glu Glu
            420                     425                 430
Asp Thr Ile Gln Phe Asp Asp Pro Gly Gln Gly Glu Asp Asp Asn Ala
            435                 440                     445
Ile Pro Gly Thr Asn Thr Pro Pro Pro Pro Gly Pro Pro Pro Asn Leu
    450                 455                 460
Ser Ser Ser Arg Leu Leu Thr Ile Ser Asn Ala Ser Leu Asn Gln Val
465                 470                     475                 480
Leu Gln Asn Val Arg Gln His Leu Asn Thr Ala Tyr Asp Ser Asn Gly
                485                     490                 495
Asn Ser Val Ser Asp Leu Asn Gln Asp Leu Gly Gln Val Val Lys Asn
                500                     505                 510
Ser Glu Asn Gly Val Asn Phe Pro Thr Val Ile Leu Pro Lys Thr Thr
            515                 520                 525
Gly Asp Thr Asp Pro Ser Gly Gln Ala Thr Gly Gly Val Thr Glu Gly
            530                 535                 540
Gly Gly His Ile Arg Asn Ile Ile Gln Arg Asn Thr Gln Ser Thr Gly
545                 550                     555                 560
Gln Ser Glu Gly Ala Thr Pro Thr Pro Gln Pro Thr Ile Ala Lys Ile
                565                 570                 575
Val Thr Ser Leu Arg Lys Ala Asn Val Ser Ser Ser Ser Val Leu Pro
            580                 585                 590
Gln Pro Gln Val Ala Thr Thr Ile Thr Pro Gln Ala Arg Thr Ala Ser
        595                 600                 605
Thr Ser Thr Thr Ser Ile Gly Thr Gly Thr Glu Ser Thr Ser Thr Thr
    610                 615                 620
Ser Thr Gly Thr Gly Thr Gly Ser Val Ser Thr Gln Ser Thr Gly Val
625                 630                 635                 640
Gly Thr Pro Thr Thr Thr Thr Arg Ser Thr Gly Thr Ser Ala Thr Thr
            645                 650                 655
Thr Thr Ser Ser Ala Ser Thr Gln Thr Pro Gln Ala Pro Leu Pro Ser
            660                 665                 670
Gly Thr Arg His Val Ala Thr Ile Ser Leu Val Arg Asn Ala Ala Gly
        675                 680                 685
Arg Ser Ile Val Leu Gln Gln Gly Gly Arg Ser Gln Ser Phe Pro Ile
    690                 695                 700
Pro Pro Ser Gly Thr Gly Thr Gln Asn Met Gly Ala Gln Leu Trp Ala
705                 710                 715                 720
Ala Ala Ser Gln Val Ala Ser Thr Leu Gly Gln Val Val Asn Gln Ala
                725                 730                 735
Ala Thr Ala Gly Ser Gln Pro Ser Ser Arg Arg Ser Ser Pro Thr Ser
            740                 745                 750
Pro Arg Arg Lys
        755


<210> 575
<211> 241
<212> PRT
<213> Chlamydia pneumoniae
```

835

<400> 575

```
Val Glu Asp Met Ala Gly His Ser Lys Trp Ala Asn Thr Lys His Arg
1               5               10              15
Lys Glu Arg Ala Asp His Lys Lys Gly Lys Ile Phe Ser Arg Ile Ile
            20              25              30
Lys Glu Leu Ile Ser Ala Val Lys Leu Gly Gly Ala Asp Pro Lys Ser
        35              40              45
Asn Ala Arg Leu Arg Met Val Ile Gln Lys Ala Lys Glu Asn Asn Ile
    50              55              60
Pro Asn Glu Asn Ile Glu Arg Asn Leu Lys Lys Ala Thr Ser Ala Glu
65              70              75              80
Gln Lys Asn Phe Glu Glu Val Thr Tyr Glu Leu Tyr Gly His Gly Gly
            85              90              95
Val Gly Ile Ile Val Glu Ala Met Thr Asp Asn Lys Asn Arg Thr Ala
            100             105             110
Ser Asp Met Arg Ile Ala Ile Asn Lys Arg Gly Gly Ser Leu Val Glu
        115             120             125
Pro Gly Ser Val Leu Tyr Asn Phe Ala Arg Lys Gly Ala Cys Thr Val
    130             135             140
Ala Lys Ser Ser Ile Asp Glu Glu Val Ile Phe Ser Tyr Ala Ile Glu
145             150             155             160
Ala Gly Ala Glu Asp Leu Asp Thr Glu Asp Glu Glu Asn Phe Leu Val
            165             170             175
Ile Cys Ala Pro Ser Glu Leu Ala Ser Val Lys Glu Lys Leu Ile Ser
        180             185             190
Gln Gly Ala Thr Cys Ser Glu Asp Arg Leu Ile Tyr Leu Pro Leu Arg
    195             200             205
Leu Val Asp Cys Asp Glu Lys Asp Gly Glu Ala Asn Leu Ala Leu Ile
210             215             220
Asp Trp Leu Glu Gln Ile Glu Asp Val Asp Asp Val Tyr His Asn Met
225             230             235             240
Ser
```

<210> 576
<211> 195
<212> PRT
<213> Chlamydia pneumoniae

<400> 576

```
Ser Ala Glu Arg Gly Phe Arg His Pro Ile Val Met Val Glu Thr Val
1               5               10              15
Leu His Asn Phe Gln Arg Tyr Leu Ser Lys Tyr Leu Tyr Arg Val Phe
            20              25              30
Arg Phe Pro Cys Arg Lys Lys Thr Phe Leu Ser Ser His Arg Val Leu
        35              40              45
Ala Arg Pro Ser Phe Pro Val Asp Tyr Cys Pro Gly Lys Ile Tyr Asp
    50              55              60
Leu Gln Glu Ile Tyr Glu Glu Leu Asn Ala Gln Leu Phe Gln Gly Ala
65              70              75              80
Leu Arg Leu Gln Ile Gly Trp Phe Gly Arg Lys Ala Thr Arg Lys Gly
            85              90              95
Lys Ser Val Val Leu Gly Leu Phe His Glu Asn Glu Gln Leu Ile Arg
            100             105             110
Ile His Arg Ser Leu Asp Arg Gln Glu Ile Pro Arg Phe Phe Met Glu
        115             120             125
Tyr Leu Val Tyr His Glu Met Val His Ser Val Val Pro Arg Glu Tyr
    130             135             140
Ser Leu Ser Gly Arg Ser Ile Phe His Gly Lys Lys Phe Lys Glu Tyr
145             150             155             160
```

```
Glu Gln Arg Phe Pro Leu Tyr Asp Arg Ala Val Ala Trp Glu Lys Ala
                165                 170                 175
Asn Ala Tyr Leu Leu Arg Gly Tyr Lys Lys Arg Val Gly Gly Gly Tyr
            180                 185                 190
Gly Arg Ala
        195


        <210> 577
        <211> 181
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 577
Ser Ile Phe Gly Arg Val Trp Arg Ser Phe Met Thr Ala Glu Lys Gln
1                   5                   10                  15
Asn Thr Gly Ile Leu Gly Leu Glu Ile Arg Tyr Thr Leu Pro Ser Asp
            20                  25                  30
Ala Thr Tyr Met Leu Lys Trp Leu Asn Asp Pro Lys Ile Leu Arg Gly
            35                  40                  45
Phe Pro Ile Gln Thr Glu Ala Glu Ile Arg Glu Thr Val Asn Phe Trp
        50                  55                  60
Val Gly Phe Tyr Arg Tyr His Ser Ser Leu Thr Ala Val Tyr Asn Gly
65                  70                  75                  80
Asn Val Ala Gly Val Ala Thr Leu Val Leu Asn Pro Tyr Val Lys Val
                85                  90                  95
Ser His His Ala Leu Ile Ser Ile Ile Val Gly Glu Glu Phe Arg Asn
            100                 105                 110
Lys Gly Ile Gly Thr Ala Leu Leu Asn Asn Leu Ile His Leu Ala Lys
        115                 120                 125
Thr Arg Phe Lys Leu Glu Val Leu Tyr Leu Glu Val Tyr Glu Gly Asn
    130                 135                 140
Pro Ala Leu His Leu Tyr Gln Arg Phe Gly Phe Val Glu Val Gly Arg
145                 150                 155                 160
Gln Asn Arg Phe Tyr Lys Asp Glu Ile Gly Tyr Leu Ala Lys Thr Thr
                165                 170                 175
Met Glu Lys Asp Leu
                180


        <210> 578
        <211> 23
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 578
Met Gln Glu Asn Leu Asp Lys Arg Leu Glu Ala Leu Arg Thr Glu Ile
1                   5                   10                  15
Ser Leu Ala Ala Arg Ser Leu
                20


        <210> 579
        <211> 90
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 579
Glu Ser Pro Met Ser Gln Lys Asn Lys Asn Ser Ala Phe Met His Pro
1                   5                   10                  15
Val Asn Ile Ser Thr Asp Leu Ala Val Ile Val Gly Lys Gly Pro Met
            20                  25                  30
Pro Arg Thr Glu Ile Val Lys Lys Val Trp Glu Tyr Ile Lys Lys His
        35                  40                  45
```

837

Asn Cys Gln Asp Gln Lys Asn Lys Arg Asn Ile Leu Pro Asp Ala Asn
        50   55   60
Leu Ala Lys Val Phe Gly Ser Ser Asp Pro Ile Asp Met Phe Gln Met
65   70   75   80
Thr Lys Ala Leu Ser Lys His Ile Val Lys
                85   90

        <210> 580
        <211> 326
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 580
Thr Thr Asn Ser Phe Ile Val Leu Ile Ser Ile Ser Leu Ala Thr Leu
  1   5   10   15
Pro Ile Leu Ala Phe Ser Trp Ala Ser Phe Ile Glu Pro Asn Trp Leu
            20   25   30
Arg Thr Thr Ala Ile Pro Trp Arg Leu Pro Lys Lys His Ala His Leu
        35   40   45
His Gly Leu Arg Ile Ala Gln Ile Ser Asp Leu His Phe His Lys Arg
        50   55   60
Val Pro Glu Lys Phe Leu Asn Lys Val Ser Lys Ser Ile Lys Asn Phe
65   70   75   80
Ser Pro Asp Leu Ile Val Phe Cys Gly Asp Leu Leu Cys Arg Ala Arg
                85   90   95
Leu Glu Asp Lys Glu Arg Leu Glu Thr Phe Leu Asn Thr Leu Glu Ala
            100   105   110
Pro Leu Gly Val Phe Ala Ile Leu Gly Asn His Asp Tyr Ser Ser Tyr
        115   120   125
Ile Ser Arg Asn Thr Lys Gly Glu Ile Thr Cys Ile Pro Glu Glu Lys
    130   135   140
Ser Arg Pro Ile Gln Arg Ala Ile Ile Ala Val Met Gln Gly Leu Phe
145   150   155   160
Ser Ser Pro Ser Tyr Arg Tyr Asp Pro Asn Leu Thr Pro Gln Glu Pro
                165   170   175
His Pro Asp Leu Leu Lys Leu Leu Lys Asn Thr Pro Leu Thr Leu Leu
                180   185   190
His Asn Thr Thr His Val Ile Pro Asn Thr Leu Asn Ile Val Gly Leu
        195   200   205
Gly Asp Leu Phe Ala Arg Gln Phe His Pro Glu Gln Ala Phe Lys Asn
    210   215   220
Tyr Asp Pro Ser Leu Pro Gly Leu Leu Leu Ser His Asn Pro Asp Gly
225   230   235   240
Ile Thr Arg Leu Gln Gln Tyr Pro Gly Asp Phe Val Leu Ser Gly His
                245   250   255
Ser His Gly Pro Gln Val Thr Leu Ser Trp Pro Lys Phe Ala Arg Lys
                260   265   270
Phe Phe Glu Arg Leu Ser Gly Leu Glu Asn Pro Tyr Leu Ala Arg Gly
            275   280   285
Tyr Phe Val Thr Lys Glu Gly Lys Gln Leu Tyr Val Asn Arg Gly Leu
        290   295   300
Gly Gly Leu Lys Arg Ile Arg Phe Cys Ser Pro Pro Glu Ile Cys Tyr
305   310   315   320
Ile Thr Cys Ser Tyr Asp
                325

        <210> 581
        <211> 228
        <212> PRT
        <213> Chlamydia pneumoniae

                                    838

<400> 581

```
Lys Glu Phe Ala Ser Ala Pro Leu Leu Lys Ser Ala Thr Ser His Val
1               5                   10                  15
Pro Met Ile Lys Ser Ser Leu Ile Leu Leu Ser Gly Gly Gln Gly Thr
            20                  25                  30
Arg Phe Gly Ser Lys Ile Pro Lys Gln Tyr Leu Pro Leu Asn Gly Thr
        35                  40                  45
Pro Leu Val Leu His Ser Leu Lys Ile Leu Ser Ser Leu Pro Gln Ile
    50                  55                  60
Ala Glu Val Ile Val Val Cys Asp Pro Ser Tyr Gln Glu Thr Phe Gln
65                  70                  75                  80
Glu Tyr Pro Val Ser Phe Ala Ile Pro Gly Glu Arg Arg Gln Asp Ser
            85                  90                  95
Val Phe Ser Gly Leu Gln Gln Val Ser Tyr Pro Trp Val Ile Ile His
            100                 105                 110
Asp Gly Ala Arg Pro Phe Ile Tyr Pro Asp Glu Ile His Asp Leu Leu
        115                 120                 125
Glu Thr Ala Glu Lys Ile Gly Ala Thr Ala Leu Ala Ser Pro Ile Pro
    130                 135                 140
Tyr Thr Ile Lys Gln Arg Asn Pro Val Arg Thr Leu Asp Arg Asp Asn
145                 150                 155                 160
Leu Ala Ile Ile His Thr Pro Gln Cys Ile Lys Thr Glu Ile Leu Arg
            165                 170                 175
Glu Gly Leu Ala Leu Ala Lys Glu Lys Gln Leu Thr Leu Val Asp Asp
            180                 185                 190
Ile Glu Ala Ala Glu Ile Ile Gly Lys Pro Ser Gln Leu Val Phe Asn
    195                 200                 205
Lys His Pro Gln Ile Lys Ile Ser Tyr Pro Glu Asp Leu Thr Ile Ala
    210                 215                 220
Gln Ala Leu Leu
225
```

<210> 582
<211> 286
<212> PRT
<213> Chlamydia pneumoniae

<400> 582

```
Ala Ser Ser Asn Gln Asn Phe Leu Pro Arg Arg Ser Asn Asp Cys Pro
1               5                   10                  15
Ser Pro Pro Met Thr Lys Val Ala Leu Leu Ile Ala Tyr Gln Gly Thr
            20                  25                  30
Ala Tyr Ser Gly Trp Gln Gln Gln Pro Asn Asp Leu Ser Ile Gln Glu
        35                  40                  45
Val Ile Glu Ser Ser Leu Lys Lys Ile Thr Lys Thr Arg Thr Pro Leu
    50                  55                  60
Ile Ala Ser Gly Arg Thr Asp Ala Gly Val His Ala Tyr Gly Gln Val
65                  70                  75                  80
Ala His Phe Arg Ala Pro Asp His Pro Leu Phe Ala Asn Ala Asn Leu
            85                  90                  95
Thr Lys Lys Ala Leu Asn Ala Ile Leu Pro Lys Asp Ile Val Ile Arg
            100                 105                 110
Asp Val Ala Leu Phe Asp Asp Asn Phe His Ala Arg Tyr Leu Ala Ile
        115                 120                 125
Ala Lys Glu Tyr Arg Tyr Ser Leu Ser Arg Leu Ala Lys Pro Leu Pro
    130                 135                 140
Trp Gln Arg His Phe Cys Tyr Thr Pro Arg His Pro Phe Ser Thr Glu
145                 150                 155                 160
Leu Met Gln Glu Gly Ala Asn Leu Leu Ile Gly Thr His Asp Phe Ala
            165                 170                 175
```

Ser Phe Ala Asn His Gly Arg Asp Tyr Asn Ser Thr Val Arg Thr Ile
            180   185   190
Tyr Thr Leu Asp Ile Val Asp Lys Gly Asp Ser Leu Ser Ile Ile Cys
            195   200   205
Arg Gly Asn Gly Phe Leu Tyr Lys Met Val Arg Asn Leu Val Gly Ala
            210   215   220
Leu Leu Asp Val Gly Lys Gly Ala Tyr Pro Pro Glu His Leu Leu Asp
225   230   235   240
Ile Leu Glu Gln Lys Asn Arg Arg Glu Gly Pro Ser Ala Ala Pro Ala
                245   250   255
Tyr Gly Leu Ser Leu His His Val Cys Tyr Ser Ser Pro Tyr Asn Asn
                260   265   270
Phe Cys Cys Glu Gln Cys Ser Val Ser Thr Ser Asn Glu Gly
            275   280   285

        <210> 583
        <211> 263
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 583
Glu Gly Leu Arg Trp Arg Ser Val Lys Ser Phe Leu Arg Gln Cys Trp
1   5   10   15
Ile Tyr Ser Met Leu Val Ser Asp Glu Phe Gln Leu Cys Leu Arg Ser
            20   25   30
Gly Met Tyr Leu Glu Asp Tyr Asp Val Phe Phe Phe Asp Leu Asp Gly
            35   40   45
Leu Leu Val Asp Thr Glu Pro Cys Phe Tyr Arg Ala Phe Leu Gln Ala
50   55   60
Cys Ala Glu Phe Ser Leu Glu Val His Trp Asp Phe Ser Thr Tyr Tyr
65   70   75   80
Ser His Thr Thr Leu Gly Thr Glu Ile Phe Ser Lys Lys Phe Ile Glu
                85   90   95
Gln Tyr Pro Gln Ala Gln Glu Tyr Met Ala Glu Ile Phe Ala Lys Arg
            100   105   110
Leu Gln Ile Tyr Tyr Lys Ser Leu Glu His Ala Gly Pro Ala Leu Met
            115   120   125
Pro Gly Val Glu Ala Phe Ile Glu Leu Val Leu Ser Leu Asn Lys Thr
130   135   140
Phe Gly Val Val Thr Asn Ser Pro Arg Asp Ala Thr His Thr Leu Arg
145   150   155   160
Thr Met Tyr Pro Ile Leu Asn Lys Phe Leu Phe Trp Val Thr Arg Glu
                165   170   175
Asn Tyr Ala Arg Pro Lys Pro Tyr Gly Asp Ser Tyr Asp Tyr Ala Tyr
            180   185   190
Arg Thr Phe Ala Arg Glu Gly Met Lys Val Ile Gly Phe Glu Asp Ser
            195   200   205
Val Lys Gly Leu Arg Ala Leu Ser Lys Ile Pro Ala Thr Leu Val Cys
            210   215   220
Ile Asn Ser Met Ala Glu Ile Thr Pro Glu Asp Tyr Pro Glu Leu Lys
225   230   235   240
Gly Lys Glu Phe Phe Ser Tyr Pro Ser Phe Asp Val Leu Thr Glu His
                245   250   255
Cys Ser Gln Gln Lys Leu Leu
            260

        <210> 584
        <211> 291
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 584

```
Lys Asn Pro Asn Ala Leu Leu Lys Lys Ile Gln His Arg Leu Val Lys
1               5                   10                  15
Met His Asp Lys Asn Lys Val Leu Tyr Leu Gln Ala Asn His Leu Asn
            20                  25                  30
Gln Lys Arg Lys Arg His Asn Pro Leu Asn Thr Tyr His Ser Ser Asn
            35                  40                  45
Thr Thr Glu Thr Arg Arg Leu Pro Thr Tyr Tyr Lys Ser Asn Ile Val
        50                  55                  60
Leu Lys Met Ile Leu Arg Ile Ser Thr Val Ser Leu Leu Thr Ser Cys
65                  70                  75                  80
Ser Phe Ser Lys Asn Ser Arg Thr Cys Phe Val Thr Pro Glu Arg Ile
                85                  90                  95
Thr Ser Gln Lys Asp Cys Pro Val Leu Leu His Pro Lys Ser Thr Thr
            100                 105                 110
Ile Ser Pro Pro Leu Tyr Asp Trp Ile Ser Pro Asn Arg Glu Val Ile
        115                 120                 125
Thr Ala Tyr Ser Phe Tyr Cys Arg Gly Gln Gly Asn Ser Ile Ile Thr
        130                 135                 140
Pro Glu Gly Val Leu Tyr Asp Cys Asp Gly Leu His His Ser Ile Thr
145                 150                 155                 160
Lys Glu Glu Phe Arg Tyr Ile His Pro Arg Leu Ile Glu Val Val Arg
                165                 170                 175
Leu Leu Gln Gln Asp His Pro Lys Val Ser Ile Ile Glu Ala Phe Cys
            180                 185                 190
Cys Pro Lys His Phe His Phe Leu Glu Ala Ser Gly Ile Ser Leu Ser
        195                 200                 205
Gln Leu His Leu Gln Gly Thr Ala Ala Thr Phe Ala Leu Asp Pro Pro
        210                 215                 220
Leu Pro Met Glu Lys Leu Leu Ala Thr Ile Lys Lys Leu Tyr Lys Lys
225                 230                 235                 240
Asn Ser Asp Pro Ser Leu Ser Asn Phe Ile Val Thr Glu Ala Thr Leu
                245                 250                 255
Thr Asn Pro Glu Leu Arg Leu Thr Gln Gln Asp Leu Gly Ser His Thr
            260                 265                 270
Glu Ile Thr Val Glu Ile Leu Asp Asn Leu Gln Asn Lys Glu Ala Leu
        275                 280                 285
Ser Ser Ala
    290
```

<210> 585
<211> 123
<212> PRT
<213> Chlamydia pneumoniae

<400> 585

```
Ile Val Leu Ser Phe Phe Leu Gly Lys Thr Lys Val Thr Pro Arg Phe
1               5                   10                  15
Leu Met Asn Glu Arg Thr Leu Leu Leu Leu Lys Lys Lys Lys Gly
            20                  25                  30
Leu Phe Leu Ala Ile Leu Asp Leu Thr Gln Thr Glu Ser Ser Leu Thr
        35                  40                  45
Thr Pro Glu Leu Glu Lys Val Leu Lys Gln Lys Lys Ile Phe Leu Ser
        50                  55                  60
Cys Ile Asp Arg Val Asp Leu Gln Ile Lys Glu Phe Arg His Ala Phe
65                  70                  75                  80
Ser Ser Glu Leu Pro Gln Asp Ile Gln Glu Glu Leu Glu Glu Ile Arg
                85                  90                  95
Asp Val Ile Ile Arg Ile Leu Asp Thr Asp Lys Arg Asn Tyr Ala Gln
            100                 105                 110
```

Lys Lys Lys Glu Phe Gly Ile Tyr Glu Arg Pro
        115   120

        <210> 586
        <211> 380
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 586
Ile Arg Ile Asn Ala Thr Met His Arg Lys Lys Arg Asn Leu Val Phe
1   5   10   15
Met Asn Val Pro Asp Ser Lys Asn Leu His Pro Pro Ala Tyr Glu Leu
            20   25   30
Leu Glu Ile Lys Ala Arg Ile Thr Gln Ser Tyr Lys Glu Ala Ser Ala
        35   40   45
Ile Leu Thr Ala Ile Pro Asp Gly Ile Leu Leu Leu Ser Glu Thr Gly
    50   55   60
His Phe Leu Ile Cys Asn Ser Gln Ala Arg Glu Ile Leu Gly Ile Asp
65   70   75   80
Glu Asn Leu Glu Ile Leu Asn Arg Ser Phe Thr Asp Val Leu Pro Asp
                85   90   95
Thr Cys Leu Gly Phe Ser Ile Gln Glu Ala Leu Glu Ser Leu Lys Val
            100   105   110
Pro Lys Thr Leu Arg Leu Ser Leu Cys Lys Glu Ser Lys Glu Lys Glu
        115   120   125
Val Glu Leu Phe Ile Arg Lys Asn Glu Ile Ser Gly Tyr Leu Phe Ile
    130   135   140
Gln Ile Arg Asp Arg Ser Asp Tyr Lys Gln Leu Glu Asn Ala Ile Glu
145   150   155   160
Arg Tyr Lys Asn Ile Ala Glu Leu Gly Lys Met Thr Ala Thr Leu Ala
                165   170   175
His Glu Ile Arg Asn Pro Leu Ser Gly Ile Val Gly Phe Ala Ser Ile
                180   185   190
Leu Lys Lys Glu Ile Ser Ser Pro Arg His Gln Arg Met Leu Ser Ser
        195   200   205
Ile Ile Ser Gly Thr Arg Ser Leu Asn Asn Leu Val Ser Ser Met Leu
    210   215   220
Glu Tyr Thr Lys Ser Gln Pro Leu Asn Leu Lys Ile Ile Asn Leu Gln
225   230   235   240
Asp Phe Phe Ser Ser Leu Ile Pro Leu Leu Ser Val Ser Phe Pro Asn
                245   250   255
Cys Lys Phe Val Arg Glu Gly Ala Gln Pro Leu Phe Arg Ser Ile Asp
            260   265   270
Pro Asp Arg Met Asn Ser Val Val Trp Asn Leu Val Lys Asn Ala Val
        275   280   285
Glu Thr Gly Asn Ser Pro Ile Thr Leu Thr Leu His Thr Ser Gly Asp
    290   295   300
Ile Ser Val Thr Asn Pro Gly Thr Ile Pro Ser Glu Ile Met Asp Lys
305   310   315   320
Leu Phe Thr Pro Phe Phe Thr Thr Lys Arg Glu Gly Asn Gly Leu Gly
                325   330   335
Leu Ala Glu Ala Gln Lys Ile Ile Arg Leu His Gly Gly Asp Ile Gln
            340   345   350
Leu Lys Thr Ser Asp Ser Ala Val Ser Phe Phe Ile Ile Ile Pro Glu
        355   360   365
Leu Leu Ala Ala Leu Pro Lys Glu Arg Ala Ala Ser
    370   375   380

                    842

<210> 587
<211> 672
<212> PRT
<213> Chlamydia pneumoniae

<400> 587

```
Ile Ser Leu Arg Arg Lys Ile Leu Arg Pro Asn Asn Phe Ser Ile Gly
1               5                   10                  15
Asp Cys Ser Ser Asn Met Ala Thr Pro Ala Gln Lys Ser Pro Thr Phe
            20                  25                  30
Gln Asp Pro Ser Phe Val Arg Glu Leu Gly Ser Asn His Pro Val Phe
        35                  40                  45
Ser Pro Leu Thr Leu Glu Glu Arg Gly Glu Met Ala Ile Ala Arg Val
    50                  55                  60
Gln Gln Cys Gly Trp Asn His Thr Ile Val Lys Val Ser Leu Ile Ile
65                  70                  75                  80
Leu Ala Leu Leu Thr Ile Leu Gly Gly Gly Leu Leu Val Gly Leu Leu
                85                  90                  95
Pro Ala Val Pro Met Phe Ile Gly Thr Gly Leu Ile Ala Leu Gly Ala
            100                 105                 110
Val Ile Phe Ala Leu Ala Leu Ile Leu Cys Leu Tyr Asp Ser Gln Gly
        115                 120                 125
Leu Pro Glu Glu Leu Pro Pro Val Pro Glu Pro Gln Gln Ile Gln Ile
    130                 135                 140
Glu Asp Leu Arg Asn Glu Thr Arg Glu Val Leu Glu Gly Thr Leu Leu
145                 150                 155                 160
Glu Val Leu Leu Lys Asp Arg Asp Ala Lys Asp Pro Ala Val Pro Gln
                165                 170                 175
Val Val Val Asp Cys Glu Lys Arg Leu Gly Met Leu Asp Arg Lys Leu
            180                 185                 190
Arg Arg Glu Glu Glu Ile Leu Tyr Arg Ser Thr Ala His Leu Lys Asp
            195                 200                 205
Glu Glu Arg Tyr Glu Phe Leu Leu Glu Leu Leu Glu Met Arg Ser Leu
    210                 215                 220
Val Ala Asp Arg Leu Glu Phe Asn Arg Arg Ser Tyr Glu Arg Phe Val
225                 230                 235                 240
Gln Gly Ile Met Thr Val Arg Ser Glu Glu Gly Glu Lys Glu Ile Ser
                245                 250                 255
Arg Leu Gln Asp Leu Ile Ser Leu Gln Gln Gln Thr Val Gln Asp Leu
            260                 265                 270
Arg Ser Arg Ile Asp Asp Glu Gln Lys Arg Cys Trp Thr Ala Leu Gln
    275                 280                 285
Arg Ile Asn Gln Ser Gln Lys Asp Ile Gln Arg Ala His Asp Arg Glu
    290                 295                 300
Ala Ser Gln Arg Ala Cys Glu Gly Thr Glu Met Asp Cys Ala Glu Arg
305                 310                 315                 320
Gln Gln Leu Glu Lys Asp Leu Arg Arg Gln Leu Lys Ser Met Gln Glu
                325                 330                 335
Trp Ile Glu Met Arg Gly Thr Ile His Gln Gln Glu Lys Ala Trp Arg
            340                 345                 350
Lys Gln Asn Ala Lys Leu Glu Arg Leu Gln Glu Asp Leu Arg Leu Thr
    355                 360                 365
Gly Ile Ala Phe Asp Glu Gln Ser Leu Phe Tyr Arg Glu Tyr Lys Glu
    370                 375                 380
Lys Tyr Leu Ser Gln Lys Leu Asp Met Gln Lys Ile Leu Gln Glu Val
385                 390                 395                 400
Asn Ala Glu Lys Ser Glu Lys Ala Cys Leu Glu Ser Leu Val His Asp
                405                 410                 415
Tyr Glu Lys Gln Leu Glu Gln Lys Asp Ala Asn Leu Lys Lys Ala Ala
            420                 425                 430
```

843

```
Ala Val Trp Glu Glu Glu Leu Gly Lys Gln Gln Gln Glu Asp Tyr Glu
        435                 440                 445
Gln Thr Gln Glu Ile Arg Arg Leu Ser Thr Phe Ile Leu Glu Tyr Gln
        450                 455                 460
Asp Ser Leu Arg Glu Ala Glu Lys Val Glu Lys Asp Phe Gln Glu Leu
465                 470                 475                 480
Gln Gln Arg Tyr Ser Arg Leu Gln Glu Glu Lys Gln Val Lys Glu Lys
                485                 490                 495
Ile Leu Glu Glu Ser Met Asn His Phe Ala Asp Leu Phe Glu Lys Ala
        500                 505                 510
Gln Lys Glu Asn Met Ala Tyr Lys Lys Lys Leu Ala Asp Leu Glu Gly
        515                 520                 525
Ala Ala Ala Pro Thr Glu Ile Gly Glu Asp Asp Asp Trp Val Leu Thr
        530                 535                 540
Asp Ser Ala Ser Leu Ser Gln Lys Lys Ile Arg Glu Leu Val Glu Glu
545                 550                 555                 560
Asn Gln Glu Leu Leu Lys Ala Leu Ala Phe Lys Ser Asn Glu Leu Thr
                565                 570                 575
Gln Leu Val Ala Asp Ala Val Glu Ala Glu Lys Glu Ile Ser Lys Leu
        580                 585                 590
Arg Glu His Ile Glu Glu Gln Lys Glu Gly Leu Arg Ala Leu Asp Lys
        595                 600                 605
Met His Ala Gln Ala Ile Lys Asp Cys Glu Ala Ala Gln Arg Lys Cys
        610                 615                 620
Cys Asp Leu Glu Ser Leu Leu Ser Pro Val Arg Glu Asp Ala Gly Met
625                 630                 635                 640
Arg Phe Glu Leu Glu Val Glu Leu Gln Arg Leu Gln Glu Glu Asn Ala
                645                 650                 655
Gln Leu Arg Ala Glu Val Glu Arg Leu Glu Gln Glu Gln Phe Gln Gly
        660                 665                 670


        <210> 588
        <211> 397
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 588
Lys Glu Lys Met Asn Pro Ser Arg Gly Glu Asn Met Ala Ile Lys Asn
1                   5                   10                  15
Ile Leu Val Val Asp Asp Glu Pro Leu Leu Arg Asp Phe Leu Ser Glu
                20                  25                  30
Leu Leu Thr Ser Gln Gly Phe Ile Pro Asp Thr Ala Glu Asn Leu Arg
        35                  40                  45
Asn Ala Leu Gln Met Ile Arg Ser Arg Asp Tyr Asp Leu Val Ile Ser
        50                  55                  60
Asp Met Ser Met Pro Asp Gly Ser Gly Leu Asp Leu Ile Lys Ile Ile
65                  70                  75                  80
Lys Gln Ser Ser Pro His Thr Pro Val Leu Val Val Thr Ala Tyr Gly
                85                  90                  95
Ser Ile Glu Asn Ala Val Glu Ala Met His Gln Gly Ala Phe Asn Tyr
                100                 105                 110
Leu Thr Lys Pro Phe Ser Ser Glu Ala Leu Phe Ala Phe Ile Ser Lys
        115                 120                 125
Ala Glu Glu Leu Lys Asn Leu Val His Glu Asn Leu Phe Leu His Ser
        130                 135                 140
Gln Thr Thr Pro Asp Ser His Pro Leu Ile Ala Glu Ser Lys Ala Met
145                 150                 155                 160
Lys Asp Leu Leu Ala Ile Ala Lys Lys Ala Ala Ser Ser Ser Ala Asn
                165                 170                 175
Ile Phe Ile His Gly Glu Ser Gly Cys Gly Lys Glu Val Leu Ser Phe
        180                 185                 190
```

844

```
Phe Ile His His Asn Ser Pro Arg Ala Asn His Pro Tyr Ile Lys Val
        195                 200                 205
Asn Cys Ala Ala Ile Pro Glu Thr Leu Leu Glu Ser Glu Leu Phe Gly
    210                 215                 220
His Glu Lys Gly Ala Phe Thr Gly Ala Thr Thr Lys Lys Ala Gly Arg
225                 230                 235                 240
Phe Glu Leu Ala His Lys Gly Thr Leu Leu Leu Asp Glu Ile Thr Glu
            245                 250                 255
Val Pro Val Asn Leu Gln Ala Lys Leu Leu Arg Ala Ile Gln Glu Lys
            260                 265                 270
Glu Ile Glu His Leu Gly Gly Thr Lys Thr Leu Ser Val Asp Val Arg
        275                 280                 285
Ile Leu Ala Thr Ser Asn Arg Lys Leu Lys Glu Ala Ile Asp Asp Lys
    290                 295                 300
Ser Phe Arg Gln Asp Leu Tyr Tyr Arg Leu Asn Val Ile Pro Leu His
305                 310                 315                 320
Leu Pro Pro Leu Arg Asp Arg Gln Asp Asp Ile Leu Pro Leu Ala Asn
                325                 330                 335
Tyr Phe Leu Asn Lys Phe Cys Arg Met Asn Asn Thr Pro Leu Lys Thr
            340                 345                 350
Leu Ser Pro Lys Ala Gln Glu Leu Leu Leu Asn Tyr Pro Trp Pro Gly
        355                 360                 365
Asn Ile Arg Glu Leu Ser Asn Val Leu Glu Arg Val Val Ile Leu Glu
370                 375                 380
Asn Thr Ser Leu Leu Thr Glu Asp Met Leu Ala Leu Ala
385                 390                 395
```

<210> 589
<211> 249
<212> PRT
<213> Chlamydia pneumoniae

<400> 589
```
Ser Tyr Gly Glu Leu Phe Ile Leu Ser Thr Leu Leu Lys His His Val
1                 5                 10                  15
Thr Leu Gly Asp Lys Met Arg Pro His Arg Lys His Val Ser Ser Lys
            20                  25                  30
Ser Leu Ala Leu Lys Gln Ser Ala Ser Thr His Val Glu Ile Thr Thr
        35                  40                  45
Lys Ala Phe Arg Leu Ser Met Pro Leu Lys Gln Leu Ile Leu Glu Lys
    50                  55                  60
Ser Asp His Leu Pro Pro Met Glu Thr Ile Arg Val Val Leu Thr Ser
65                  70                  75                  80
His Lys Asp Lys Leu Gly Thr Glu Val His Val Val Ala Ser His Gly
            85                  90                  95
Lys Glu Ile Leu Gln Thr Lys Val His Asn Ala Asn Pro Tyr Thr Ala
            100                 105                 110
Val Ile Asn Ala Phe Lys Lys Ile Arg Thr Met Ala Asn Lys His Ser
        115                 120                 125
Asn Lys Arg Lys Asp Arg Thr Lys His Asp Leu Gly Leu Ala Ala Lys
    130                 135                 140
Glu Glu Arg Ile Ala Ile Gln Glu Glu Gln Glu Asp Arg Leu Ser Asn
145                 150                 155                 160
Glu Trp Leu Pro Val Glu Gly Leu Asp Ala Trp Asp Ser Leu Lys Thr
            165                 170                 175
Leu Gly Tyr Val Pro Ala Ser Ala Lys Lys Lys Ile Ser Lys Lys Lys
            180                 185                 190
Met Ser Ile Arg Met Leu Ser Gln Asp Glu Ala Ile Arg Gln Leu Glu
        195                 200                 205
Ser Ala Ala Glu Asn Phe Leu Ile Phe Leu Asn Glu Gln Glu His Lys
    210                 215                 220
```

Ile Gln Cys Ile Tyr Lys Lys His Asp Gly Asn Tyr Val Leu Ile Glu
225   230   235   240
Pro Ser Leu Lys Pro Gly Phe Cys Ile
                245

<210> 590
<211> 198
<212> PRT
<213> Chlamydia pneumoniae

<400> 590
Thr Ser Lys Ser Ile Lys Ser Asn Ala Phe Ile Lys Asn Met Thr Ala
1   5   10   15
Thr Met Ser Leu Leu Asn Leu Pro Ser Ser Gln Asp Ser Ala Ser Glu
            20   25   30
Asp Ser Thr Ser Gln Ser Gln Ile Phe Asp Pro Ile Arg Asn Arg Glu
        35   40   45
Leu Val Ser Thr Pro Glu Glu Lys Val Arg Gln Arg Leu Leu Ser Phe
    50   55   60
Leu Met His Lys Leu Asn Tyr Pro Lys Lys Leu Ile Ile Ile Glu Lys
65   70   75   80
Glu Leu Lys Thr Leu Phe Pro Leu Leu Met Arg Lys Gly Thr Leu Ile
            85   90   95
Pro Lys Arg Arg Pro Asp Ile Leu Ile Ile Thr Pro Pro Thr Tyr Thr
            100   105   110
Asp Ala Gln Gly Asn Thr His Asn Leu Gly Asp Pro Lys Pro Leu Leu
        115   120   125
Leu Ile Glu Cys Lys Ala Leu Ala Val Asn Gln Asn Ala Leu Lys Gln
    130   135   140
Leu Leu Ser Tyr Asn Tyr Ser Ile Gly Ala Thr Cys Ile Ala Met Ala
145   150   155   160
Gly Lys His Ser Gln Val Ser Ala Leu Phe Asn Pro Lys Thr Gln Thr
            165   170   175
Leu Asp Phe Tyr Pro Gly Leu Pro Glu Tyr Ser Gln Leu Leu Asn Tyr
            180   185   190
Phe Ile Ser Leu Asn Leu
        195

<210> 591
<211> 254
<212> PRT
<213> Chlamydia pneumoniae

<400> 591
Ser Ser Met Gln Ile Cys Val Thr Gly Val Val Leu Arg Ser Arg Pro
1   5   10   15
Leu Gly Lys Asn His Thr Leu Thr Thr Leu Phe Thr Pro Glu Gly Leu
            20   25   30
Phe Thr Phe Phe Ala Lys Gln Gly Gln Thr Leu Gln Cys Asp Tyr Arg
        35   40   45
Glu Thr Leu Val Pro Ile Ser Leu Gly Lys Tyr Thr Leu His Arg Asn
        50   55   60
Gly Ser Arg Leu Pro Lys Leu Thr His Gly Asp Ile Leu Asn Ala Phe
65   70   75   80
Glu Ala Ile Lys Gln Thr Tyr Ala Leu Leu Glu Ala Ser Gly Lys Met
            85   90   95
Ile Gln Ala Leu Leu Ala Ser Gln Trp Lys Glu Lys Pro Ser His Lys
            100   105   110
Leu Phe Ser Leu Phe Leu Asn Phe Leu His Arg Ile Pro Glu Ser Ser
    115   120   125

846

```
Asn Pro Glu Phe Phe Ala Ala Ile Phe Val Leu Lys Leu Leu Gln Tyr
    130             135             140
Glu Gly Ile Leu Asp Leu Thr Pro Ala Cys Ser Leu Cys Lys Ala Ser
145             150             155             160
Leu Pro Tyr Ala Cys Tyr Arg Tyr Gln Gly His Lys Leu Cys Lys Lys
            165             170             175
His Gln His Lys Gln Ala Ile Ser Ile Glu Lys Glu Glu Glu Gln Ile
            180             185             190
Leu Gln Ala Ile Ile His Ala Lys Gln Phe Ser Glu Leu Leu Ala Ile
        195             200             205
Ala Glu Phe Pro Ile Ala Ile Ala Glu Lys Ile Phe Tyr Leu Phe Asp
    210             215             220
Ser Leu Gln Glu Glu Lys Lys Ser Glu Arg Asn Ser Ser Glu Asp Pro
225             230             235             240
Tyr His Glu Ile Leu Arg Leu Ser Lys Val Val His Pro Tyr
            245             250


        <210> 592
        <211> 207
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 592
Leu Phe Leu Tyr Gly Asp His Asn Leu Gly Phe Ala Cys Arg Tyr Leu
1               5               10              15
Phe Phe Phe Ile Val Leu Phe Ala Ser Gly Ser Phe Gly Asn Gln Leu
            20              25              30
Leu Ser Val Pro Cys Trp Leu Ser Glu Glu Glu Ser Phe Tyr Thr His
        35              40              45
Arg Phe Asp Phe Ser Lys Ser Tyr Pro Asp Met Glu Asn Met Glu Ile
    50              55              60
Gln Ala Gln Arg Lys Lys Arg Val Glu Phe Asn Leu Thr Gly Glu Phe
65              70              75              80
Pro Lys Leu Glu Thr Leu Asn Tyr Gln Gly Ser Phe Gly His Leu Arg
            85              90              95
Ala Lys Cys Arg Gly Val Tyr Pro Val Leu Tyr Ala Leu Asn Phe Ser
            100             105             110
Cys Ser Ser Cys Lys Met Asp Met Asp Phe Arg Gly Lys Trp Asn Arg
        115             120             125
Ser Ser Thr Ile Thr Ile Ser Asn Gln Lys Glu Ser Ile Asn Leu Lys
    130             135             140
Leu Pro Lys Asp Val Gly Val Ile Val Asn Thr Lys Thr Ser Leu Lys
145             150             155             160
Gly Asn Val Cys Pro Gly Ser Thr Phe Ile Lys Gln Gly Trp Gly Val
            165             170             175
Trp Asn Lys Ile Tyr His Asn Asp Leu Val Gly Phe Ser Glu Val Thr
            180             185             190
Leu Ile Phe Asn Val Ser Ser Glu Gly Gly Thr Ile Thr Phe Ser
        195             200             205


        <210> 593
        <211> 219
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 593
Ser Leu Ile Met Arg Cys Thr Ala Tyr Cys Thr Ala Ser Ala Tyr Asn
1               5               10              15
Leu His Val Leu Phe His Leu Leu Lys Pro Arg Tyr Pro Thr Ile Leu
            20              25              30
```

847

```
Ser Arg Glu Tyr Val Leu Ala Asn Leu Asp Ser Thr Gln Ala Ser Asn
        35                  40                  45
Gln Leu Ala Ile Phe Phe Pro Phe Gly Val Ala Val Phe Trp Gly Trp
    50                  55                  60
Glu Glu Ser Glu Glu Ile Lys Leu Leu Gln Thr Ile Val Thr Ala Ser
65                  70                  75                  80
Pro Glu Ile Leu Pro Gln Pro Glu Ile Asp Cys Tyr Asn Phe His Tyr
                85                  90                  95
Gly Asp Lys Leu Gln Ile Arg Arg Asp Arg Leu Thr Leu Ala Asp Thr
            100                 105                 110
Thr Leu Asn Thr Lys Leu Ala Ile Ala Phe Gly Leu Ala Gln Ser Val
        115                 120                 125
Lys Leu Thr Thr Phe Glu Thr Thr Ile Tyr Lys Thr Ile Glu Asp Ser
    130                 135                 140
Lys Arg Leu Pro Gln Asp Leu Ala Thr Lys Gly Lys Ile Ser Met Ser
145                 150                 155                 160
Arg Lys Ala Ile Ala Lys Lys Ile Gly Lys Leu Phe Leu Asp Lys Ala
                165                 170                 175
Ser Val Asn Leu His Ser Asp Ile Leu Asp Glu Pro Asp Phe Phe Trp
                180                 185                 190
Asp His Pro Glu Thr Gln Ala Ile Tyr Arg Asp Val Leu Ser Cys Leu
        195                 200                 205
Asp Ile Glu Ala Arg Ile Asn Val Leu Ile Val
    210                 215

        <210> 594
        <211> 110
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 594
Leu Tyr Ser Lys Met Phe Ser Met Ser Phe Lys Arg Phe Leu Gln Gln
1               5                   10                  15
Ile Pro Val Arg Ile Cys Leu Leu Ile Ile Tyr Leu Tyr Gln Trp Leu
            20                  25                  30
Ile Ser Pro Leu Leu Gly Ser Cys Cys Arg Phe Phe Pro Ser Cys Ser
        35                  40                  45
His Tyr Ala Glu Gln Ala Leu Lys Ser His Gly Phe Leu Met Gly Cys
    50                  55                  60
Trp Leu Ser Ile Lys Arg Ile Gly Lys Cys Gly Pro Trp His Pro Gly
65                  70                  75                  80
Gly Ile Asp Met Val Pro Lys Thr Ala Leu Gln Glu Val Leu Glu Pro
                85                  90                  95
Tyr Gln Glu Ile Asp Gly Gly Asp Ser Ser His Phe Ser Glu
            100                 105                 110

        <210> 595
        <211> 368
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 595
Val Leu Gly Ala Lys Cys Met Ala Phe Lys Arg Lys Thr Arg Trp Leu
1               5                   10                  15
Trp Gln Val Leu Ile Leu Ser Val Gly Leu Asn Met Leu Phe Leu Leu
            20                  25                  30
Leu Phe Tyr Ser Ala Ile Phe Arg Lys Asp Ile Tyr Lys Leu His Leu
        35                  40                  45
Phe Ser Gly Pro Leu Ile Ala Lys Ser Ser Arg Lys Val Tyr Leu Ser
    50                  55                  60
```

848

Glu Asp Phe Leu Asn Glu Ile Ser Gln Ala Ser Leu Asp Asp Leu Ile
65   70   75   80

Ser Leu Phe Lys Asp Glu Arg Tyr Met Tyr Gly Arg Pro Ile Lys Leu
                85   90   95

Trp Ala Leu Ser Val Ala Ile Ala Ser His His Ile Asp Ile Thr Pro
                100   105   110

Val Leu Ser Lys Pro Leu Thr Tyr Thr Glu Leu Lys Gly Ser Ser Val
                115   120   125

Arg Trp Leu Leu Pro Asn Ile Asp Leu Lys Asp Phe Pro Val Ile Leu
        130   135   140

Asp Tyr Leu Arg Cys His Lys Tyr Pro Tyr Thr Ser Lys Gly Leu Phe
145   150   155   160

Leu Leu Ile Glu Lys Met Val Gln Glu Gly Trp Val Asp Glu Asp Cys
                165   170   175

Leu Tyr His Phe Cys Ser Thr Pro Glu Phe Leu Tyr Leu Arg Thr Leu
                180   185   190

Leu Val Gly Ala Asp Val Gln Ala Ser Ser Val Ala Ser Leu Ala Arg
            195   200   205

Met Val Ile Arg Cys Gly Ser Glu Arg Phe Phe His Phe Cys Asn Glu
        210   215   220

Glu Ser Arg Thr Ser Met Ile Ser Ala Thr Gln Arg Gln Lys Val Leu
225   230   235   240

Lys Ser Tyr Leu Asp Cys Glu Glu Ser Leu Ala Ala Leu Leu Leu Leu
                245   250   255

Val His Asp Ser Asp Val Val Leu His Glu Phe Cys Asp Glu Asp Leu
                260   265   270

Glu Lys Val Ile Arg Leu Met Pro Gln Glu Ser Pro Tyr Ser Gln Asn
        275   280   285

Phe Phe Ser Arg Leu Gln His Ser Pro Arg Arg Glu Leu Ala Cys Met
        290   295   300

Ser Thr Gln Arg Val Glu Ala Pro Arg Val Gln Glu Asp Gln Asp Glu
305   310   315   320

Glu Tyr Val Val Gln Asp Gly Asp Ser Leu Trp Leu Ile Ala Lys Arg
                325   330   335

Phe Gly Ile Pro Met Asp Lys Ile Ile Gln Lys Asn Gly Leu Asn His
            340   345   350

His Arg Leu Phe Pro Gly Lys Val Leu Lys Leu Pro Ala Lys Gln Ser
    355   360   365

        <210> 596
        <211> 814
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 596
Asn Thr Cys His Tyr Thr Gln Val Ile Val Lys Ser Leu Val Lys Tyr
1   5   10   15

Ser Leu Arg Leu Ser Ser Met Arg Ile Pro Ile Thr Leu Leu Gln Thr
            20   25   30

Tyr Phe Ser Glu Pro Leu Ser Thr Lys Glu Ile Leu Glu Ala Cys Asp
            35   40   45

His Ile Gly Ile Glu Ala Glu Ile Glu Asn Thr Thr Leu Tyr Ser Phe
    50   55   60

Ala Ser Val Ile Thr Ala Lys Ile Leu His Thr Ile Pro His Pro Asn
65   70   75   80

Ala Asp Lys Leu Arg Val Ala Thr Leu Thr Asp Gly Glu Lys Glu His
                85   90   95

Gln Val Val Cys Gly Ala Pro Asn Cys Glu Ala Gly Leu Ile Val Ala
                100   105   110

Leu Ala Leu Pro Gly Ala Lys Leu Phe Asp Ser Glu Gly Gln Ala Tyr
    115   120   125

                                    849

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Thr Ile Lys Lys Ser Lys Leu Arg Gly Val Glu Ser Gln Gly Met Cys
    130                 135                 140
Cys Gly Ala Asp Glu Leu Gly Leu Asp Glu Leu Gln Ile Gln Glu Arg
145                 150                 155                 160
Ala Leu Leu Glu Leu Pro Glu Ala Thr Pro Leu Gly Glu Asp Leu Ala
                165                 170                 175
Thr Val Leu Gly Asn Thr Ser Leu Glu Ile Ser Leu Thr Pro Asn Leu
                180                 185                 190
Gly His Cys Ala Ser Phe Leu Gly Leu Ala Arg Glu Ile Cys His Val
        195                 200                 205
Thr Gln Ala Asn Leu Val Ile Pro Lys Glu Phe Ser Phe Glu Asn Leu
    210                 215                 220
Pro Thr Thr Ala Leu Asp Met Gly Asn Asp Pro Asp Ile Cys Pro Phe
225                 230                 235                 240
Phe Ser Tyr Val Val Ile Thr Gly Ile Ser Ala Gln Pro Ser Pro Ile
                245                 250                 255
Lys Leu Gln Glu Ser Leu Gln Ala Leu Lys Gln Lys Pro Ile Asn Ala
                260                 265                 270
Ile Val Asp Ile Thr Asn Tyr Ile Met Leu Ser Leu Gly Gln Pro Leu
    275                 280                 285
His Ala Tyr Asp Ala Ser His Val Ala Leu Asp Ser Leu Arg Val Glu
    290                 295                 300
Lys Leu Ser Thr Pro Glu Ser Leu Thr Leu Leu Asn Gly Glu Thr Val
305                 310                 315                 320
Leu Leu Pro Ser Gly Val Pro Val Val Arg Asp Asp His Ser Leu Leu
                325                 330                 335
Gly Leu Gly Gly Val Met Gly Ala Lys Ala Pro Ser Phe Gln Glu Thr
            340                 345                 350
Thr Thr Thr Thr Val Ile Lys Ala Ala Tyr Phe Leu Pro Glu Ala Leu
    355                 360                 365
Arg Ala Ser Gln Lys Leu Leu Pro Ile Pro Ser Glu Ser Ala Tyr Arg
370                 375                 380
Phe Thr Arg Gly Ile Asp Pro Gln Asn Val Val Pro Ala Leu Gln Ala
385                 390                 395                 400
Ala Ile His Tyr Ile Leu Glu Ile Phe Pro Glu Ala Thr Ile Ser Pro
                405                 410                 415
Ile Tyr Ser Ser Gly Glu Ile Cys Arg Glu Leu Lys Glu Val Ala Leu
            420                 425                 430
Arg Pro Lys Thr Leu Gln Arg Ile Leu Gly Lys Ser Phe Ser Ile Glu
            435                 440                 445
Ile Leu Ser Gln Lys Leu Gln Ser Leu Gly Phe Ser Thr Thr Pro Gln
    450                 455                 460
Glu Thr Ser Leu Leu Val Lys Val Pro Ser Tyr Arg His Asp Ile Asn
465                 470                 475                 480
Glu Glu Ile Asp Leu Val Glu Glu Ile Cys Arg Thr Glu Ser Trp Asn
                485                 490                 495
Ile Glu Thr Gln Asn Pro Val Ser Cys Tyr Thr Pro Ile Tyr Lys Leu
            500                 505                 510
Lys Arg Glu Thr Ala Gly Phe Leu Ala Asn Ala Gly Leu Gln Glu Phe
        515                 520                 525
Phe Thr Pro Asp Leu Leu Asp Pro Glu Thr Val Ala Leu Thr Arg Lys
    530                 535                 540
Glu Lys Glu Glu Ile Ser Leu Gln Gly Ser Lys His Thr Thr Val Leu
545                 550                 555                 560
Arg Ser Ser Leu Leu Pro Gly Leu Leu Lys Ser Ala Ala Thr Asn Leu
                565                 570                 575
Asn Arg Gln Ala Pro Ser Val Gln Ala Phe Glu Ile Gly Thr Val Tyr
            580                 585                 590
Ala Lys His Gly Glu Gln Tyr Gln Glu Thr Gln Thr Leu Ala Ile Leu
    595                 600                 605
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850

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Leu Thr Glu Asp Gly Glu Ser Arg Ser Trp Leu Pro Lys Pro Ser Leu
    610                 615                 620
Ser Phe Tyr Ser Leu Lys Gly Trp Val Glu Arg Leu Leu Tyr His His
625                 630                 635                 640
His Leu Ser Ile Asp Ala Leu Thr Leu Glu Ser Ser Ala Leu Cys Glu
                645                 650                 655
Phe His Pro Tyr Gln Gln Gly Val Leu Arg Ile His Lys Gln Ser Phe
                660                 665                 670
Ala Thr Leu Gly Gln Val His Pro Glu Leu Ala Lys Lys Ala Gln Ile
            675                 680                 685
Lys His Pro Val Phe Phe Ala Glu Leu Asn Leu Asp Leu Leu Cys Lys
    690                 695                 700
Met Leu Lys Lys Thr Thr Lys Leu Tyr Lys Pro Tyr Ala Ile Tyr Pro
705                 710                 715                 720
Ser Ser Phe Arg Asp Leu Thr Leu Thr Val Pro Glu Asp Ile Pro Ala
                725                 730                 735
Asn Leu Leu Arg Gln Lys Leu Leu His Glu Gly Ser Lys Trp Leu Glu
                740                 745                 750
Ser Val Thr Ile Ile Ser Ile Tyr Gln Asp Lys Ser Leu Glu Thr Arg
    755                 760                 765
Asn Lys Asn Val Ser Leu Arg Leu Val Phe Gln Asp Tyr Glu Arg Thr
    770                 775                 780
Leu Ser Asn Gln Asp Ile Glu Glu Glu Tyr Cys Arg Leu Val Ala Leu
785                 790                 795                 800
Leu Asn Glu Leu Leu Thr Asp Thr Lys Gly Thr Ile Asn Ser
                805                 810


    <210> 597
    <211> 328
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 597
Arg Asp Tyr Gln Phe Met Lys Gln Leu Leu Phe Cys Val Cys Val Phe
1                 5                 10                  15
Ala Met Ser Cys Ser Ala Tyr Ala Ser Pro Arg Arg Gln Asp Pro Ser
        20                  25                  30
Val Met Lys Glu Thr Phe Arg Asn Asn Tyr Gly Ile Ile Val Ser Gly
        35                  40                  45
Gln Glu Trp Val Lys Arg Gly Ser Asp Gly Thr Ile Thr Lys Val Leu
    50                  55                  60
Lys Asn Gly Ala Thr Leu His Glu Val Tyr Ser Gly Gly Leu Leu His
65                  70                  75                  80
Gly Glu Ile Thr Leu Thr Phe Pro His Thr Thr Ala Leu Asp Val Val
                85                  90                  95
Gln Ile Tyr Asp Gln Gly Arg Leu Val Ser Arg Lys Thr Phe Phe Val
            100                 105                 110
Asn Gly Leu Pro Ser Gln Glu Glu Leu Phe Asn Glu Asp Gly Thr Phe
    115                 120                 125
Val Leu Thr Arg Trp Pro Asp Asn Asn Asp Ser Asp Thr Ile Thr Lys
    130                 135                 140
Pro Tyr Phe Ile Glu Thr Thr Tyr Gln Gly His Val Ile Glu Gly Ser
145                 150                 155                 160
Tyr Thr Ser Phe Asn Gly Lys Tyr Ser Ser Ser Ile His Asn Gly Glu
                165                 170                 175
Gly Val Arg Ser Val Phe Ser Ser Asn Asn Ile Leu Leu Ser Glu Glu
            180                 185                 190
Thr Phe Asn Glu Gly Val Met Val Lys Tyr Thr Thr Phe Tyr Pro Asn
        195                 200                 205
Arg Asp Pro Glu Ser Ile Thr His Tyr Gln Asn Gly Gln Pro His Gly
    210                 215                 220
```

851

Leu Arg Leu Thr Tyr Leu Gln Gly Gly Ile Pro Asn Thr Ile Glu Glu
225   230   235   240
Trp Arg Tyr Gly Phe Gln Asp Gly Thr Thr Ile Val Phe Lys Asn Gly
                245   250   255
Cys Lys Thr Ser Glu Ile Ala Tyr Val Lys Gly Val Lys Glu Gly Leu
                260   265   270
Glu Leu Arg Tyr Asn Glu Gln Glu Ile Val Ala Glu Glu Val Ser Trp
        275   280   285
Arg Asn Asp Phe Leu His Gly Glu Arg Lys Ile Tyr Ala Gly Gly Ile
        290   295   300
Gln Lys His Glu Trp Tyr Tyr Arg Gly Arg Ser Val Ser Lys Ala Lys
305   310   315   320
Phe Glu Arg Leu Asn Ala Ala Gly
                325

<210> 598
<211> 176
<212> PRT
<213> Chlamydia pneumoniae

<400> 598
Phe Ala Val Met Ala Asp Asp Thr Leu Ile Pro Lys Leu Met Lys Asn
1   5   10   15
Ser Leu Ser Gln Ala Cys Ser Glu Gly Leu Leu Ile Ala Lys Tyr Pro
                20   25   30
Pro Leu Gln Val Ile Val His Phe Asp Asn Asn Leu Val Val Lys Thr
        35   40   45
His Leu Ser Val Ala Pro Val Phe Ser Cys Leu Phe Leu Gly Pro Ala
        50   55   60
Ala His Lys Ala Met Gln Glu Ile Val Leu Trp Cys Ser Arg Tyr Ala
65   70   75   80
Asn Lys Glu His Pro Pro Phe Ser Ser His Phe Ala Lys Asp Leu Ile
                85   90   95
Pro Ser Gln Tyr Leu Glu Ile Leu Asn Cys Val Ala Glu Ile Pro Phe
                100   105   110
Gly Glu Gln Gln Thr Tyr Ala Glu Ile Ala Lys Lys Thr Asp Thr His
        115   120   125
Pro Arg Thr Val Gly Ala Ala Cys Lys Gln Asn Pro Phe Leu Leu Phe
        130   135   140
Phe Pro Cys His Arg Val Val Gly Ser His Gly Glu Arg Asn Tyr Val
145   150   155   160
Leu Gly Pro Val Ile His Glu Ile Leu Leu Lys Phe Glu Asn Ser Tyr
                165   170   175

<210> 599
<211> 579
<212> PRT
<213> Chlamydia pneumoniae

<400> 599
Met Gln Lys His Pro Ser Phe Tyr Gln Arg Phe Leu Ser Ala Tyr Tyr
1   5   10   15
Lys Asn Leu Leu Ala Ser Leu Ser Trp Lys Phe Phe Ile Ser Val Ala
                20   25   30
Leu Ile Gly Ile Tyr Ala Pro Leu Phe Ala Ser Ser Lys Pro Leu Leu
        35   40   45
Val Thr Trp His Gly Glu Ile Phe Phe Pro Leu Leu Arg Tyr Leu Phe
        50   55   60
Phe Pro Gly Tyr Tyr Thr Lys Pro Val Asp Leu Phe Phe Asn Val Leu
65   70   75   80

852

```
Met Val Thr Phe Pro Phe Phe Ile Leu Ser Phe Lys Leu Thr Arg Gly
              85                      90                      95
Trp Leu Arg Arg Trp Leu Leu Gly Leu Cys Ile Ile Ser Gln Cys Met
            100                 105                 110
Ile Phe Ala Trp Ala Tyr Ser Gly Lys Val Gln Asp Pro Ala Leu Ala
        115                 120                 125
Glu Asn Leu Lys Lys Met Arg Ala Glu Lys Val Arg Glu Asn Ile Ser
    130                 135                 140
Lys Val Asn Ser Glu Met Val Met Leu Leu Pro Lys Asp Thr Arg Thr
145             150                 155                 160
Trp Glu Met Glu Arg Arg Tyr Met Ser Thr Tyr Glu Gln Leu Gly Ile
            165                 170                 175
Leu Ile Lys Ala Lys Tyr Arg Lys Lys Gln Glu Ala Ser Val Lys Lys
        180                 185                 190
Tyr Gln Val Ala Phe Glu Glu Lys Arg Gln Ser Pro Met Pro Thr Leu
    195                 200                 205
Arg His Leu Glu Met Lys Asn Glu Gly Ile Cys Leu Lys Arg Leu Gln
    210                 215                 220
Gln Arg Val Asp Lys Met Gln Arg Pro Tyr Glu Met Ala Gln Gln Ala
225                 230                 235                 240
Trp Asn Arg Ala Thr Asp Asn Tyr Arg Pro Phe Leu Met Ala Leu Thr
                245                 250                 255
Arg Ile Glu His Glu Leu Arg Leu Ala Asp Tyr Asn Asn Trp Gly Gln
            260                 265                 270
Pro Glu Asp Leu Cys Ile Ala Tyr Ala Asn Val Glu Lys Arg Ala Glu
    275                 280                 285
Pro Tyr Lys Lys Ser Leu Leu Glu Ile Arg Gln Val Leu Glu Asp Tyr
    290                 295                 300
Ala Lys Leu Arg Ser Ala Ile Ser Phe Ile Gln Asp Lys Arg Leu Trp
305                 310                 315                 320
Ile Glu Lys Glu Ser Glu Asp Leu Arg Ile Leu Ile Asn Pro Phe Phe
                325                 330                 335
Ser Ser Phe His Trp Glu Asp Asp Ala Gly Gly Ser Arg Glu Met Asn
            340                 345                 350
Lys Tyr Val Pro Trp Trp Gln Leu Ser Arg Val Thr Arg Lys Asp Leu
    355                 360                 365
Leu Ala Ala Leu Val Phe Gly Ile Arg Ile Ala Leu Val Val Ala Gly
    370                 375                 380
Ile Gly Ile Thr Ile Ala Leu Ala Ile Gly Ile Met Ile Gly Leu Val
385                 390                 395                 400
Ser Gly Tyr Phe Gly Gly Thr Val Asp Met Ile Leu Ser Arg Phe Thr
                405                 410                 415
Glu Ile Trp Glu Thr Met Pro Val Leu Phe Ile Leu Met Leu Val Ile
            420                 425                 430
Ser Ile Thr Gln Gln Lys Ser Leu Leu Leu Asn Thr Val Leu Leu Gly
            435                 440                 445
Cys Phe Ser Trp Thr Gly Phe Ser Arg Tyr Val Arg Ile Glu Val Leu
    450                 455                 460
Lys Gln Arg Asp Arg Gly Tyr Val Leu Ala Ala Thr Asn Leu Gly Tyr
465                 470                 475                 480
Ser His Tyr Tyr Ile Met Val His Gln Ile Leu Pro Asn Ala Ile Val
                485                 490                 495
Pro Val Ile Ser Leu Val Pro Phe Ala Met Met Ala Met Ile Ser Cys
            500                 505                 510
Glu Ala Gly Leu Thr Phe Leu Gly Leu Gly Glu Glu Ser Ser Ala Ser
    515                 520                 525
Trp Gly Asn Leu Met Arg Glu Gly Val Thr Gly Phe Pro Ala Glu Ser
530                 535                 540
Ala Val Leu Trp Pro Pro Ala Ile Ile Leu Thr Met Leu Leu Ile Ala
545                 550                 555                 560
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853

```
Ile Ala Leu Ile Gly Asp Gly Val Arg Asp Ala Leu Asp Pro Arg Leu
                565                 570                 575
Gln Asp Ser


    <210> 600
    <211> 498
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 600
Glu Glu Gly Gly Ser Val Leu Lys Tyr Ile Leu Lys Arg Leu Val Leu
1               5                   10                  15
Ile Pro Leu Thr Leu Phe Ala Ile Val Ser Ile Asn Phe Val Ile Leu
            20                  25                  30
Asn Ala Ala Pro Gly Asp Val Leu Glu Glu Lys Ser Arg Asp Ala Leu
            35                  40                  45
Gly Glu Ala Gly Lys Ser Asp Lys Met Arg Ser Tyr Lys Gly Pro Asp
        50                  55                  60
Arg Tyr Leu Gln Phe Arg Glu His Tyr Gly Leu Thr Leu Pro Ile Phe
65              70                  75                  80
Phe Asn Thr Arg Pro Lys Ile Thr His Lys Lys Ile Gln Thr Ala Leu
            85                  90                  95
Gln Glu Leu Ala Asn Ala Asn Asn Thr Thr Pro Ser Ala Lys Asn Ala
            100                 105                 110
Ala Lys Ser Leu Val Tyr Trp Gly Asp Cys Ala Lys Phe Val Met Pro
        115                 120                 125
Ala Leu Leu Phe Glu Ala Asp Asp Ala Ser Arg Asp Asp Lys Tyr Arg
        130                 135                 140
His Ile Ala Ala Asp Leu Phe Ile Arg Gly Gly Val Leu Gln Gly Phe
145             150                 155                 160
Val Gly Pro Asn Leu Ser Pro Glu Gln Arg Ala Gln Asn Lys Glu Ile
            165                 170                 175
Ala Glu Ser Asn Ala Phe Leu Val Arg Gln Leu Asn Glu Glu Asp Leu
        180                 185                 190
Asp Thr Lys Val Glu Ala Leu Lys Gly Trp Phe Gln Asp His Gly Gly
        195                 200                 205
Thr Glu Val Phe Cys Tyr Ser Ser Lys Gln Phe Trp Lys Thr Phe Phe
210                 215                 220
Leu Glu Thr Arg Phe Ala Arg Tyr Met Ser Arg Val Leu Arg Leu Asp
225             230                 235                 240
Phe Gly Thr Leu Arg Asn Asp Ala His Lys Thr Val Ile Ser Glu Val
            245                 250                 255
Ile Lys Arg Leu Arg Cys Ser Leu Val Leu Ser Ile Leu Pro Met Ile
            260                 265                 270
Val Gly Phe Val Leu Cys Gln Ile Phe Gly Met Ile Met Ala Leu Lys
        275                 280                 285
Arg Asn Arg Trp Ile Asp His Ser Leu Asn Phe Ile Phe Leu Ile Leu
        290                 295                 300
Phe Ser Ile Pro Val Phe Val Ala Val Pro Trp Ile Leu Asp Asn Phe
305                 310                 315                 320
Val Ile Asn Lys Thr Ile Pro Phe Thr Thr Ile Pro Met Pro Tyr Ser
            325                 330                 335
Gly Leu Arg Ser Pro Pro Glu Val Phe Asn Glu Leu Ser Thr Leu Gly
        340                 345                 350
Arg Ile Phe Asp Leu Val Ser His Gly Phe Leu Pro Phe Cys Ala Val
        355                 360                 365
Ser Tyr Gly Ala Leu Ala Ala Gln Ser Arg Leu Ser Arg Ser Ile Phe
370                 375                 380
Leu Glu Val Leu Ser Gln Asp Phe Ile Cys Ala Ala Lys Ala Arg Gly
385                 390                 395                 400
```

854

Leu Arg Trp Phe Asp Ile Leu Tyr Lys His Val Gly Lys Asn Ala Ala
     405   410   415
Val Ser Ile Val Thr Ser Leu Ala Ser Ser Leu Gly Thr Leu Leu Gly
    420   425   430
Gly Ala Leu Val Val Glu Thr Leu Phe Asn Ile Asp Gly Phe Gly Asn
   435   440   445
Phe Phe Tyr Gln Ala Ile Leu Asn Arg Asp His Asn Val Val Leu Phe
   450   455   460
Ser Val Leu Val Gly Ser Ala Leu Ser Leu Val Gly Tyr Leu Leu Gly
465   470   475   480
Asp Ile Cys Tyr Val Leu Leu Asp Pro Arg Val Gln Leu Glu Gly Arg
     485   490   495
Arg Ile

  <210> 601
  <211> 714
  <212> PRT
  <213> Chlamydia pneumoniae

  <400> 601
Lys Arg Arg Glu Ser Gly His Met Tyr Lys Arg Cys Val Leu Asp Lys
1   5   10   15
Ile Leu Lys Gly Ile Val Ala Gly Ser Leu Ile Leu Leu Tyr Trp Ser
    20   25   30
Ser Asp Leu Leu Glu Arg Asp Ile Lys Ser Ile Lys Gly Asn Val Arg
    35   40   45
Asp Ile Gln Glu Asp Ile Arg Glu Ile Ser Arg Val Val Lys Gln Gln
   50   55   60
Gln Thr Ser Gln Ala Ile Pro Ala Ala Pro Gly Val Met Leu Ala Pro
65   70   75   80
Lys Leu Val Arg Asp Glu Ala Phe Ala Leu Leu Phe Gly Asp Pro Ser
    85   90   95
Tyr Pro Asn Leu Leu Ser Leu Asp Pro Tyr Lys Gln Gln Thr Leu Pro
   100   105   110
Glu Leu Leu Gly Thr Asn Phe His Pro His Gly Ile Leu Arg Thr Ala
   115   120   125
His Val Gly Lys Pro Glu Asn Leu Ser Pro Phe Asn Gly Phe Asp Tyr
   130   135   140
Val Val Gly Phe Tyr Asp Leu Cys Ile Pro Ser Leu Ala Ser Pro His
145   150   155   160
Val Gly Lys Tyr Glu Glu Phe Ser Pro Asp Leu Ala Val Lys Ile Glu
    165   170   175
Glu His Leu Val Glu Asp Gly Ser Gly Asp Lys Glu Phe His Ile Tyr
    180   185   190
Leu Arg Pro Asn Val Phe Trp Arg Pro Ile Asp Pro Lys Ala Leu Pro
   195   200   205
Lys His Val Gln Leu Asp Glu Val Phe Gln Arg Pro His Pro Val Thr
   210   215   220
Ala His Asp Ile Lys Phe Phe Tyr Asp Ala Val Met Asn Pro Tyr Val
225   230   235   240
Ala Thr Met Arg Ala Val Ala Leu Arg Ser Cys Tyr Glu Asp Val Val
    245   250   255
Ser Val Ser Val Glu Asn Asp Leu Lys Leu Val Val Arg Trp Lys Ala
    260   265   270
His Thr Val Ile Asn Glu Glu Gly Lys Glu Glu Arg Lys Val Leu Tyr
    275   280   285
Ser Ala Phe Ser Asn Thr Leu Ser Leu Gln Pro Leu Pro Arg Phe Val
   290   295   300
Tyr Gln Tyr Phe Ala Asn Gly Glu Lys Ile Ile Glu Asp Glu Asn Ile
305   310   315   320

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Asp Thr Tyr Arg Thr Asn Ser Ile Trp Ala Gln Asn Phe Thr Met His
              325                     330                 335
Trp Ala Asn Asn Tyr Ile Val Ser Cys Gly Ala Tyr Tyr Phe Ala Gly
          340               345                   350
Met Asp Asp Glu Lys Ile Val Phe Ser Arg Asn Pro Asp Phe Tyr Asp
          355               360               365
Pro Leu Ala Ala Leu Ile Asp Lys Arg Phe Val Tyr Phe Lys Glu Ser
    370               375               380
Thr Asp Ser Leu Phe Gln Asp Phe Lys Thr Gly Lys Ile Asp Ile Ser
385               390               395                   400
Tyr Leu Pro Pro Asn Gln Arg Asp Asn Phe Tyr Ser Phe Met Lys Ser
              405               410                   415
Ser Ala Tyr Asn Lys Gln Val Ala Lys Gly Gly Ala Val Arg Glu Thr
          420               425               430
Val Ser Ala Asp Arg Ala Tyr Thr Tyr Ile Gly Trp Asn Cys Phe Ser
          435               440                   445
Leu Phe Phe Gln Ser Arg Gln Val Arg Cys Ala Met Asn Met Ala Ile
    450               455                   460
Asp Arg Glu Arg Ile Ile Glu Gln Cys Leu Asp Gly Gln Gly Tyr Thr
465               470                   475                   480
Ile Ser Gly Pro Phe Ala Ser Ser Ser Pro Ser Tyr Asn Lys Gln Ile
              485               490                   495
Glu Gly Trp His Tyr Ser Pro Glu Glu Ala Ala Arg Leu Leu Glu Glu
          500               505                   510
Glu Gly Trp Ile Asp Thr Asp Gly Asp Gly Ile Arg Glu Lys Val Ile
          515               520                   525
Asp Gly Val Ile Val Pro Phe Arg Phe Arg Leu Cys Tyr Tyr Val Lys
    530               535                   540
Ser Val Thr Ala His Thr Ile Ala Asp Tyr Val Ala Thr Ala Cys Lys
545               550                   555                   560
Glu Ile Gly Ile Glu Cys Ser Leu Leu Gly Leu Asp Met Ala Asp Leu
              565                   570               575
Ser Gln Ala Phe Asp Glu Lys Asn Phe Asp Ala Leu Leu Met Gly Trp
              580               585               590
Cys Leu Gly Ile Pro Pro Glu Asp Pro Arg Ala Leu Trp His Ser Glu
          595               600               605
Gly Ala Met Glu Lys Gly Ser Ala Asn Val Val Gly Phe His Asn Glu
    610               615               620
Glu Ala Asp Lys Ile Ile Asp Arg Leu Ser Tyr Glu Tyr Asp Leu Lys
625               630               635                   640
Glu Arg Asn Arg Leu Tyr His Arg Phe His Glu Ile Ile His Glu Glu
              645               650                   655
Ala Pro Tyr Ala Phe Leu Phe Ser Arg His Cys Ser Leu Leu Tyr Lys
              660               665                   670
Asp Tyr Val Lys Asn Ile Phe Val Pro Thr His Arg Thr Asp Leu Ile
    675               680               685
Pro Glu Ala Gln Asp Glu Thr Val Asn Val Thr Met Val Trp Leu Glu
    690               695               700
Lys Lys Glu Asp Pro Cys Leu Ser Thr Ser
705               710
```

856

Gln Pro Val Asn Leu Gln Leu Lys Gln Asp Arg Leu Ala Tyr Gly Glu
        35   40   45
Leu Ile Ile Leu Leu Ser Lys Tyr Gln Gln Lys Thr Phe Ser Ser Leu
        50   55   60
Leu Lys Glu Glu Thr Cys Ser Leu Asn Arg Ala Lys Gln His Leu Leu
65   70   75   80
Tyr Lys Ile Leu Arg Asp Phe Asn Thr Met Gln His Leu Arg Ser Leu
                85   90   95
Gly Leu Asn Gly Trp Gly Glu Ile Pro Met Ser Pro Cys Leu
                100   105   110

        <210> 603
        <211> 119
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 603
Gln Phe Pro Arg Ile His Ala Asp Asp Ile Ile Asn Ser Met Asp Glu
1   5   10   15
Ile Thr Pro Asn Tyr Pro Leu Leu Arg Gln Asp Ser Leu Trp Asn Arg
                20   25   30
Val Arg Val Ser Trp Arg Ala Asp Leu Ser Val Ser Ser Arg Tyr Glu
        35   40   45
Ile Ala Ser Ala Ile Ala Ile Leu Gly Leu Leu Val Ala Phe Cys Ala
        50   55   60
Ser Ala Ala Val Ser Ile Ile Phe Thr Ala Asn Pro Leu Ala Gln Val
65   70   75   80
Phe Ile Asp Gly Cys Leu Ala Leu Gly Leu Leu Pro Ile Pro Leu Val
                85   90   95
Ile Gly Leu Leu Ile Ile Gly Ile Ile Val Leu Leu Tyr Gly Ile Tyr
                100   105   110
Leu Phe Pro Gln Gln Arg Glu
        115

        <210> 604
        <211> 338
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 604
Asp Ser Gly Phe Met Lys Pro Leu Gly Phe Gln Glu Asn Leu Glu Ala
1   5   10   15
Leu Cys Asn Lys Thr Ser Arg Gln Leu Leu Lys Tyr Leu Ile Lys Gln
                20   25   30
Ile Leu Phe Val Cys Gly Ala Ser Leu Leu Ile Ala Leu Glu Phe Ser
                35   40   45
Phe Phe Leu Tyr Phe Phe Leu Phe Ser Gly Lys Thr Val Ile Pro Ala
        50   55   60
Phe Cys Leu Ala Cys Phe Phe Leu Thr Leu Phe Val Cys Leu Val Thr
65   70   75   80
Arg Leu Tyr Leu Leu Ser Gly Lys Gly Asp Phe Phe Glu Asp Leu Ala
                85   90   95
Ser Glu Tyr Leu Gln Gly Ala Val Pro Pro Asn Lys Arg Ser Gln Asn
                100   105   110
Ile Val Glu Glu Gln Ser His Leu Ala Ala Ala Ala Thr Lys Leu Ser
        115   120   125
Ile Asn Leu Gln Asn Gln Glu Tyr Ser Leu Leu Ser Glu Ile Phe Lys
        130   135   140
Phe Leu Pro Lys His Asp Leu Ile Arg Lys Phe Ser Cys Phe Cys Phe
145   150   155   160

```
Trp Lys Asp Tyr Phe Leu Phe Arg Glu Cys Leu Leu Gln Lys Ala Ile
                165                 170                 175
Glu Ala Tyr Ile Lys Val Val Gln Ala Ile Pro Val Asp Leu Ser Ala
            180                 185                 190
His Val Ser Leu Ala Asp Ala Tyr Val Ala Leu Ser Gly Leu Tyr Ala
            195                 200                 205
Asp Pro Arg Lys Tyr Pro Glu Phe Asp Ala Asn Tyr Trp Ile Pro Ser
        210                 215                 220
Gly Arg Tyr Ser Ala Glu Ile Gln Glu Lys Phe Phe Ala Thr Ala Arg
225                 230                 235                 240
Arg Ala Ile Glu Glu Phe Gln Ile Leu Asn Glu Tyr Ala Pro Gly Asn
            245                 250                 255
Ala Trp Val His Ala Gln Leu Ala Tyr Ser Tyr His Asp Leu Gln Met
            260                 265                 270
Pro Met Glu Glu Ile Gln Glu Tyr Glu Ile Val Leu Lys Leu Lys Pro
        275                 280                 285
Asn Asp Val Glu Thr Met Ser Lys Leu Gly Ile Leu Tyr Phe Gln Gln
        290                 295                 300
Gly Met Asn Ala Lys Gly Leu Arg Ile Tyr Glu Glu Ile Lys Lys Arg
305                 310                 315                 320
Asp Tyr Lys Lys Ser Gln Lys Leu Ile Lys Phe Tyr Gly Val Glu Tyr
                325                 330                 335
Lys Tyr
```

<210> 605
<211> 350
<212> PRT
<213> Chlamydia pneumoniae

<400> 605
```
Trp Lys Ile Met Arg Leu Ile Val Leu Met Gln Cys Leu Val Ser Leu
1               5                   10                  15
Phe Leu Ala Lys Lys Val Thr Val Thr Thr Pro Ala Tyr Leu Leu Ala
            20                  25                  30
Asn Phe Gly Gly Pro Arg His Ala Lys Asp Leu Gln Glu Phe Leu Ile
        35                  40                  45
Ser Leu Leu Thr Asp Arg Asp Val Thr Gly Thr Phe Leu Pro Arg Val
    50                  55                  60
Leu His Arg His Leu Phe Thr Phe Ile Ala Lys Lys Arg Val Pro Lys
65              70                  75                  80
Val Leu Pro Gln Tyr Gln Ser Leu Gln Asn Trp Ser Pro Ile Tyr Phe
                85                  90                  95
Asp Thr Glu Thr Leu Ala Lys Thr Leu Ser Glu Ile Leu Arg Ala Pro
            100                 105                 110
Val Ile Pro Phe His Arg Tyr Leu Pro Ser Thr His Glu Lys Thr Leu
        115                 120                 125
Leu Ala Leu Arg Thr Leu His Thr Arg His Val Ile Gly Ile Pro Leu
        130                 135                 140
Phe Pro His Phe Thr Tyr Ser Val Thr Gly Ser Ile Val Arg Phe Phe
145                 150                 155                 160
Met Lys His Val Pro Glu Ile Pro Ile Ser Trp Ile Pro Gln Phe Gly
                165                 170                 175
Ser Asp Ser Lys Phe Val Ser Leu Ile Thr Cys His Ile Arg Asp Phe
            180                 185                 190
Leu Gln Lys Leu Gly Ile Leu Glu Lys Glu Cys Cys Phe Leu Phe Ser
            195                 200                 205
Val His Gly Leu Pro Val Arg Tyr Ile Ser Gln Gly Asp Pro Tyr Ser
        210                 215                 220
Lys Gln Cys Tyr Glu Ser Phe Ser Ala Ile Thr Thr Asn Phe Lys Gln
225                 230                 235                 240
```

858

Ser Glu Asn Phe Leu Cys Phe Gln Ser Lys Phe Gly Pro Gly Lys Trp
                    245   250   255
Leu Ser Pro Ser Thr Ala Gln Leu Cys Gln Asn Ile Asp Thr Asp Lys
            260   265   270
Pro Asn Val Ile Val Val Pro Phe Gly Phe Ile Ser Asp His Leu Glu
            275   280   285
Thr Leu Tyr Glu Ile Glu Arg Asp Tyr Leu Pro Leu Leu Arg Ser Arg
            290   295   300
Gly Tyr Arg Ala Leu Arg Ile Pro Ala Ile Tyr Ser Ser Pro Leu Trp
305   310   315   320
Val Ser Thr Leu Val Asp Ile Val Lys Glu Asn Ser Thr Val Val Ala
                325   330   335
Glu Glu Leu Ile Lys Ser Gly Lys Lys His Thr Gly Ile Arg
                340   345   350

        <210> 606
        <211> 262
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 606
Cys Lys Lys Arg Gln Asn Ser Glu Ala Gln Leu Asn Val Lys Ile Lys
1   5   10   15
Phe Ser Trp Lys Val Asn Phe Leu Ile Cys Leu Leu Ala Val Gly Leu
            20   25   30
Ile Phe Phe Gly Cys Ser Arg Val Lys Arg Glu Val Leu Val Gly Arg
            35   40   45
Asp Ala Thr Trp Phe Pro Lys Gln Phe Gly Ile Tyr Thr Ser Asp Thr
            50   55   60
Asn Ala Phe Leu Asn Asp Leu Val Ser Glu Ile Asn Tyr Lys Glu Asn
65   70   75   80
Leu Asn Ile Asn Ile Val Asn Gln Asp Trp Val His Leu Phe Glu Asn
                85   90   95
Leu Asp Asp Lys Lys Thr Gln Gly Ala Phe Thr Ser Val Leu Pro Thr
            100   105   110
Leu Glu Met Leu Glu His Tyr Gln Phe Ser Asp Pro Ile Leu Leu Thr
            115   120   125
Gly Pro Val Leu Val Val Ala Gln Asp Ser Pro Tyr Gln Ser Ile Glu
            130   135   140
Asp Leu Lys Gly Arg Leu Ile Gly Val Tyr Lys Phe Asp Ser Ser Val
145   150   155   160
Leu Val Ala Gln Asn Ile Pro Asp Ala Val Ile Ser Leu Tyr Gln His
                165   170   175
Val Pro Ile Ala Leu Glu Ala Leu Thr Ser Asn Cys Tyr Asp Ala Leu
                180   185   190
Leu Ala Pro Val Ile Glu Val Thr Ala Leu Ile Glu Thr Ala Tyr Lys
            195   200   205
Gly Arg Leu Lys Ile Ile Ser Lys Pro Leu Asn Ala Asp Gly Leu Arg
            210   215   220
Leu Ala Ile Leu Lys Gly Thr Asn Gly Asp Leu Leu Glu Gly Phe Asn
225   230   235   240
Ala Gly Leu Val Lys Thr Arg Arg Ser Gly Lys Tyr Asp Ala Ile Lys
                245   250   255
Gln Arg Tyr Arg Leu Pro
                260

        <210> 607
        <211> 196
        <212> PRT
        <213> Chlamydia pneumoniae

859

<400> 607

Leu Arg Lys Leu Cys Ser Ser Arg Gly Asp Val Arg Ile Leu Ala Gly
1   5   10   15

Lys Tyr Lys Gly Lys Ser Leu Lys Thr Phe Ser Asn Pro His Ile Arg
            20   25   30

Pro Thr Ser Gly Leu Val Lys Glu Ala Phe Phe Ser Ile Cys Arg Glu
            35   40   45

Asp Ile Glu Gly Ala Ala Phe Leu Asp Leu Phe Ala Gly Met Gly Ala
        50   55   60

Ile Gly Phe Glu Ala Leu Ser Arg Gly Ala Ala Ser Val Val Phe Val
65   70   75   80

Asp Ile Ser Ile Lys Ala Ile Gln Leu Ile His Thr Asn Ser Ala Leu
                85   90   95

Leu Gly Glu Gln Leu Pro Val Val Ile Phe Arg Gln Asp Ala Gln Ser
            100   105   110

Ala Ile Gln Arg Leu Ile Lys Gln Lys Arg Ser Phe Asp Leu Ile Tyr
            115   120   125

Ile Asp Pro Pro Tyr Glu Leu Cys Asn Cys Tyr Val Glu Thr Leu Leu
            130   135   140

Gln Lys Ile Val Ser Gly Asn Ile Leu Asn Pro Glu Gly Thr Leu Phe
145   150   155   160

Leu Glu Asn Ala Ser Asp Glu Glu Ile Ala Cys Glu Gly Leu Thr Leu
                165   170   175

Arg Arg Arg Arg Lys Leu Gly Lys Thr Tyr Leu Ala Glu Tyr Ile Val
            180   185   190

Glu Lys Asp Pro
        195

<210> 608
<211> 262
<212> PRT
<213> Chlamydia pneumoniae

<400> 608

Ser Ser Tyr Ser Arg Arg Gln Leu Arg Phe Tyr Thr Gly Ser Leu Gln
1   5   10   15

Met His Ile Tyr Gly Leu Ala Asp Leu His Leu Ala Leu Gly Val Pro
            20   25   30

Glu Lys Thr Met Glu Val Phe Gly Asp Pro Trp Ile Gly Tyr His Gln
            35   40   45

Lys Ile Cys Ser Glu Trp Gln Ala Val Val His Pro Glu Asp Ile Val
        50   55   60

Leu Leu Pro Gly Asp Ile Ser Trp Ala Met Asn Leu Ser Glu Ala His
65   70   75   80

Lys Asp Phe Ala Phe Ile Gly Asp Leu Pro Gly Thr Lys Tyr Met Ile
                85   90   95

Arg Gly Asn His Asp Tyr Trp Ser Ser Ala Ser Thr Ser Lys Ile Leu
            100   105   110

Gln Ala Leu Pro Pro Ser Leu Tyr Tyr Leu Asn Gln Gly Phe Ala Leu
            115   120   125

Leu Thr Pro His Leu Ala Val Val Gly Val Arg Leu Trp Asp Ser Pro
            130   135   140

Thr Ile Cys Val Lys Lys Glu Asn Phe Leu Thr Pro Ser Thr Gln Glu
145   150   155   160

Gln Ser Tyr Thr Glu Gln Asp Glu Lys Ile Phe Leu Arg Glu Leu Gly
                165   170   175

Arg Leu Lys Arg Ala Phe Ala Ala Leu Pro Lys Glu Val Thr Glu Val
            180   185   190

Ile Val Met Thr His Tyr Pro Pro Ile Ser Ser Asp Gly Thr Pro Gly
            195   200   205

Pro Ile Ser Glu Phe Leu Glu Ala Asp Gly Arg Val Ser Leu Cys Leu
210   215   220
Phe Gly His Ile His Lys Val Gln Arg Pro Ile Asp Gly Phe Gly Asn
225   230   235   240
Ile Arg Gly Ile His Tyr Ile Leu Val Ala Ala Asp Tyr Val Asn Phe
                245   250   255
Val Pro Gln Glu Val Met
                260

<210> 609
<211> 446
<212> PRT
<213> Chlamydia pneumoniae

<400> 609
Asn Arg Arg Ile Gln Met Ile Glu Asn Asp Phe Pro Glu Ala Ser Asn
1   5   10   15
Phe Glu Ser Ser His Phe Tyr Arg Asp Lys Val Gly Val Ile Ile Leu
                20   25   30
Cys Gly Gly Glu Gly Lys Arg Leu Ser Pro Leu Thr Asn Cys Arg Cys
            35   40   45
Lys Pro Thr Val Ser Phe Gly Gly Arg Tyr Lys Leu Ile Asp Ile Pro
        50   55   60
Ile Ser His Ala Ile Ser Ala Gly Phe Ser Lys Ile Phe Val Ile Gly
65   70   75   80
Gln Tyr Leu Thr Tyr Thr Leu Gln Gln His Leu Phe Lys Thr Tyr Phe
                85   90   95
Tyr His Gly Val Leu Gln Asp Gln Ile His Leu Leu Ala Pro Glu Ala
            100   105   110
Arg Gln Gly Asp Gln Ile Trp Tyr Gln Gly Thr Ala Asp Ala Ile Arg
        115   120   125
Lys Asn Leu Leu Tyr Phe Glu Asp Thr Glu Ile Glu Tyr Phe Leu Ile
    130   135   140
Leu Ser Gly Asp Gln Leu Tyr Asn Met Asp Phe Arg Ser Ile Val Asp
145   150   155   160
Thr Ala Ile Arg Thr His Val Asp Met Val Leu Val Ala Gln Pro Ile
                165   170   175
Pro Glu Lys Asp Ala Tyr Arg Met Gly Val Leu Asp Ile Asp Ser Glu
            180   185   190
Gly Lys Leu Ile Asp Phe Tyr Glu Lys Pro Gln Glu Lys Glu Val Leu
        195   200   205
Lys Arg Phe Gln Leu Ser Ser Glu Asp Arg Arg Ile His Lys Leu Thr
    210   215   220
Glu Asp Ser Gly Asp Phe Leu Gly Ser Met Gly Ile Tyr Leu Phe Arg
225   230   235   240
Arg Asp Ser Leu Phe Ser Leu Leu Arg Glu Glu Glu Gly Asn Asp Phe
                245   250   255
Gly Lys His Leu Ile Gln Ala Gln Met Lys Arg Gly Gln Val Gln Thr
            260   265   270
Leu Leu Tyr Asn Gly Tyr Trp Ala Asp Ile Gly Thr Ile Glu Ser Tyr
        275   280   285
Tyr Glu Ala Asn Ile Ala Leu Thr Gln Lys Pro His Ala Glu Lys Arg
    290   295   300
Gly Leu Asn Cys Tyr Asp Asp Asn Gly Met Ile Tyr Ser Lys Asn His
305   310   315   320
His Leu Pro Gly Ala Ile Ile Thr Asp Ser Met Ile Ser Ser Ser Leu
                325   330   335
Leu Cys Glu Gly Cys Val Ile Asn Thr Ser His Val Ser Arg Ser Val
            340   345   350
Leu Gly Ile Arg Ser Lys Ile Gly Glu Asn Ser Val Val Asp Gln Ser
        355   360   365

```
Ile Ile Met Gly Asn Ala Arg Tyr Gly Ser Pro Ser Met Pro Ser Leu
    370                 375             380
Gly Ile Gly Lys Asp Cys Glu Ile Arg Lys Ala Ile Ile Asp Glu Asn
385             390             395                         400
Cys Cys Ile Gly Asn Gly Val Lys Leu Gln Asn Leu Lys Gly Tyr Ile
            405             410                     415
Lys Tyr Asp Ser Pro Asp Lys Lys Leu Phe Val Arg Asp Asn Ile Ile
            420             425                 430
Ile Val Pro Gln Gly Thr His Ile Pro Asp Asn Tyr Ile Phe
            435             440                 445
```

        <210> 610
        <211> 225
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 610

```
Val Ser Phe Leu Tyr Phe Val Lys Asn Gly Arg Arg Leu Trp Arg Met
1               5               10                  15
Met Asn Tyr Glu Asp Ala Lys Leu Arg Gly Gln Ala Val Ala Ile Leu
            20              25              30
Tyr Gln Ile Gly Ala Ile Lys Phe Gly Lys His Ile Leu Ala Ser Gly
        35              40              45
Glu Glu Thr Pro Leu Tyr Val Asp Met Arg Leu Val Ile Ser Ser Pro
    50              55              60
Glu Val Leu Gln Thr Val Ala Thr Leu Ile Trp Arg Leu Arg Pro Ser
65              70              75                      80
Phe Asn Ser Ser Leu Leu Cys Gly Val Pro Tyr Thr Ala Leu Thr Leu
            85              90              95
Ala Thr Ser Ile Ser Leu Lys Tyr Asn Ile Pro Met Val Leu Arg Arg
            100             105             110
Lys Glu Leu Gln Asn Val Asp Pro Ser Asp Ala Ile Lys Val Glu Gly
        115             120             125
Leu Phe Thr Pro Gly Gln Thr Cys Leu Val Ile Asn Asp Met Val Ser
    130             135             140
Ser Gly Lys Ser Ile Ile Glu Thr Ala Val Ala Leu Glu Glu Asn Gly
145             150             155                     160
Leu Val Val Arg Glu Ala Leu Val Phe Leu Asp Arg Arg Lys Glu Ala
            165             170             175
Cys Gln Pro Leu Gly Pro Gln Gly Ile Lys Val Ser Ser Val Phe Thr
        180             185             190
Val Pro Thr Leu Ile Lys Ala Leu Ile Ala Tyr Gly Lys Leu Ser Ser
    195             200             205
Gly Asp Leu Thr Leu Ala Asn Lys Ile Ser Glu Ile Leu Glu Ile Glu
    210             215             220
Ser
225
```

        <210> 611
        <211> 105
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 611
```
Gln Asn Thr Lys Asn Ser Leu Ile Arg Glu Asn Met Leu Ile Arg Leu
    1           5               10              15
Phe Leu Gly Ile Ser Leu Pro Lys Gly Phe Pro Leu Tyr Leu Glu Pro
            20              25              30
Pro Leu Val Leu Ala Thr Phe Gln Gly Thr Gln Phe Val Gly Thr Tyr
        35              40              45
```

```
Ser Glu Ala Thr Asn Pro Leu Tyr Ile Asp Asn Leu Asn Leu Asn Tyr
    50                  55              60
His Tyr Thr Gln Glu Leu Leu Tyr Lys Ala Val Pro Cys Asn Tyr Lys
65              70              75                      80
Ser Ile Tyr Arg Glu Ile Pro Leu Ile Ile Phe Pro Glu Val Leu Ile
            85              90                      95
Gly Ser Thr Pro Thr Gln Ser Thr Glu
            100             105
```

        <210> 612
        <211> 474
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 612

```
Arg Ile Phe Leu Arg Phe Lys Gly Ser Ile Met Lys Glu Glu Arg Ser
1               5               10              15
Ser Glu Ile Leu Pro Arg Val Lys Glu Thr Lys Lys His Ala Tyr Val
            20              25              30
Ser Met Gln Glu Lys Ser Cys Val Gly Glu Cys Ala Val Val Ala Ser
        35              40              45
Glu Ser Glu Glu Ala Glu Ser Val Thr Val Thr Lys Ile Ala Lys Leu
    50              55              60
Gln Arg Met Gly Ile Glu Glu Leu Asn Ile Leu Ala Arg Gln Tyr Gly
65              70              75              80
Val Lys Asn Ile Gly Ser Leu Thr Lys Ser Gln Val Val Phe Glu Ile
            85              90              95
Val Lys Ala Lys Ser Glu Arg Pro Asp Glu Leu Leu Ile Gly Glu Gly
        100             105             110
Val Leu Glu Val Leu Pro Asp Gly Phe Gly Phe Leu Arg Ser Pro Thr
    115             120             125
Tyr Asn Tyr Leu Pro Ser Ala Glu Asp Ile Tyr Val Ser Pro Ala Gln
    130             135             140
Ile Arg Arg Phe Asp Leu Lys Lys Gly Asp Thr Ile Ile Gly Thr Ile
145             150             155             160
Arg Ser Pro Lys Glu Lys Glu Lys Tyr Phe Ala Leu Leu Lys Val Asp
            165             170             175
Lys Ile Asn Gly Ser Thr Pro Asp Lys Ala Lys Glu Arg Val Leu Phe
            180             185             190
Glu Asn Leu Thr Pro Leu Tyr Pro Asn Gln Arg Ile Val Met Glu Met
    195             200             205
Gly Lys Asp His Leu Ala Glu Arg Val Leu Asp Leu Thr Ala Pro Ile
    210             215             220
Gly Lys Gly Gln Arg Gly Leu Ile Val Ala Pro Pro Arg Ser Gly Lys
225             230             235             240
Thr Val Ile Leu Gln Ser Ile Ala His Ala Ile Ala Val Asn Asn Pro
            245             250             255
Asp Ile Val Leu Ile Val Leu Leu Ile Asp Glu Arg Pro Glu Glu Val
            260             265             270
Thr Asp Met Ile Arg Gln Val Arg Gly Glu Val Val Ala Ser Thr Phe
    275             280             285
Asp Glu Gln Pro Glu Arg His Ile Gln Val Ala Glu Met Val Ile Glu
    290             295             300
Lys Ala Arg Arg Leu Val Glu His Gly Asn Asp Val Val Ile Leu Leu
305             310             315             320
Asp Ser Ile Thr Arg Leu Ala Arg Ala Tyr Asn Thr Val Gln Pro His
            325             330             335
Ser Gly Lys Ile Leu Thr Gly Gly Val Asp Ala Ser Ala Leu His Lys
            340             345             350
Pro Lys Arg Phe Phe Gly Ala Ala Arg Asn Ile Glu Gly Gly Gly Ser
    355             360             365
```

863

Leu Thr Ile Leu Ala Thr Ala Leu Ile Asp Thr Gly Ser Arg Met Asp
    370   375   380
Glu Val Ile Phe Glu Glu Phe Lys Gly Thr Gly Asn Met Glu Leu Val
385   390   395   400
Leu Asp Arg Arg Leu Ser Asp Arg Arg Thr Tyr Pro Ala Ile Asp Leu
                405   410   415
Ile Lys Ser Gly Thr Arg Lys Glu Glu Leu Leu Tyr His Pro Ser Glu
            420   425   430
Leu Glu Arg Val Tyr Leu Phe Arg Gln Ala Ile Ala Asp Leu Thr Thr
            435   440   445
Ile Asp Ala Met His Leu Leu Leu Gly Arg Leu Lys Lys Thr Asn Ser
    450   455   460
Asn Ala Glu Phe Leu Leu Ser Leu Lys Glu
465   470

        <210> 613
        <211> 238
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 613
Arg Arg Asn Arg Arg Asp Ala Lys Thr Ser Glu Arg Glu Asp Gly Ile
1   5   10   15
Ser Tyr Asp Phe Ile Arg Ser Tyr Ser Cys Glu Tyr Leu Asn Trp Lys
            20   25   30
Lys Leu Gly Arg Met Leu Lys Leu Leu Lys Val Ser Ile Thr Gly Asp
        35   40   45
Leu Ser Ser Gly Lys Thr Glu Ala Cys Gln Val Phe Gln Glu Leu Gly
    50   55   60
Ala Tyr Val Val Ser Ala Asp Glu Ile Ser His Ser Phe Leu Ile Pro
65   70   75   80
His Thr Arg Ile Gly Arg Arg Val Ile Asp Leu Leu Gly Ser Asp Val
            85   90   95
Val Val Asp Gly Ala Phe Asp Ala Gln Ala Ile Ala Ala Lys Val Phe
            100   105   110
Tyr Asn Ser Val Leu Leu Gln Gly Leu Glu Ala Ile Leu His Pro Glu
        115   120   125
Val Cys Arg Ile Ile Glu Glu Gln Tyr His Gln Ser Ile Gln Asp Gly
        130   135   140
Asn Tyr Pro Leu Phe Val Ala Glu Val Pro Leu Leu Tyr Glu Ile His
145   150   155   160
Tyr Ala Lys Trp Phe Asp Ser Val Ile Leu Val Met Ala Asn Glu Asp
            165   170   175
Ile Arg Arg Glu Arg Phe Met Lys Lys Thr Gly Arg Ser Ser Glu Asp
            180   185   190
Phe Asp Gln Arg Cys Ser Arg Phe Leu Asn Val Glu Glu Lys Leu Ala
            195   200   205
Gln Ala Asp Val Val Val Glu Asn Asn Gly Thr Lys Lys Glu Leu His
    210   215   220
Gln Lys Ile Glu Glu Tyr Phe Tyr Ala Leu Lys Gly Ala Leu
225   230   235

        <210> 614
        <211> 889
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 614
Arg Cys Ile His Thr Ser Leu Leu Cys Thr Val Glu Arg Pro Arg Arg
1   5   10   15

864

```
Glu Tyr Ala Met Lys Lys Leu Phe Val Leu Asp Ala Ser Gly Phe Ile
            20          25                  30
Phe Arg Ala Tyr Phe Ala Leu Pro Glu Met Lys Asn His Gln Gly Gln
        35              40                  45
Ala Thr Gln Ala Val Phe Gly Phe Ile Arg Ser Leu Asn Lys Leu Ile
    50              55                  60
Lys Glu Phe Ser Pro Glu Tyr Met Ile Ser Val Phe Asp Gly Pro Asn
65              70                  75                      80
Asn Lys Gln Ser Arg Gln Ala Ile Tyr Ala Asp Tyr Lys Ser Asn Arg
            85                  90                  95
Gln Lys Lys Phe Glu Asp Ile Pro Pro Gln Ile Ala Leu Val Lys Glu
            100             105             110
Tyr Cys Ser Leu Ile Gly Leu Ala Tyr Leu Glu Lys Glu Ser Val Glu
        115             120             125
Ala Asp Asp Val Ile Ala Ser Ile Ala Lys Lys Ala Arg Glu Glu Asn
    130             135             140
Tyr Lys Val Tyr Val Cys Thr Ala Asp Lys Asp Leu Leu Gln Leu Val
145             150                 155                 160
Asn Asp His Val Val Ala Trp Asn Pro Trp Ala Asp Gln Gly Val Val
            165             170             175
Gly Ile Ser Glu Val Ile Glu Arg Tyr Gly Ile Pro Pro Gly Asn Ile
            180             185             190
Pro Asp Tyr Leu Ala Leu Val Gly Asp Ser Ser Asp Asn Ile Pro Gly
        195             200             205
Leu Pro Gly Cys Gly Pro Lys Lys Ala Ala Ala Leu Leu Lys Gln Phe
    210             215             220
Gly Ser Val Glu Gly Leu Leu Glu Asn Leu Asp Ala Val Lys Gly Leu
225             230                 235                 240
Ser Gln Thr Met Leu Ser Glu Arg Gln Glu Thr Leu Lys Leu Ser Lys
            245             250             255
Arg Leu Ala Leu Leu Asp Ser Asn Ile Pro Ile Pro Val Pro Ile Glu
            260             265             270
Ser Leu Thr Phe Pro Gln His Pro Val Asp Glu Glu Lys Leu Ile His
            275             280             285
Phe Tyr Ile Gln Gln Gly Phe Lys Thr Leu Val Pro Ser Lys Gln Thr
    290             295             300
Glu Ala Ala Thr Val Asp Val Gln Ile Ile Lys Asp Ala Glu Ser Leu
305             310             315                 320
Thr Asn Ile Leu Asn Leu Val Gln Gly Gly Asp Ile Ala Phe Ala Val
            325             330             335
Ala Tyr Thr Gly Asn His Leu Leu Ser Leu Lys Leu Glu Gly Leu Ala
            340             345             350
Leu Thr Gln Gly Ser Gly Val Phe Phe Ile Ala Leu Glu Glu Glu Gly
            355             360             365
Thr Lys Ile Leu Pro Ile Leu Lys Asp Phe Phe Leu Arg Glu Asp Leu
            370             375             380
Thr Phe Tyr Gly Tyr Asn Leu Lys Arg Asp Cys His Ala Leu Leu Asn
385             390                 395                 400
Ala Gly Ile Val Ile Arg Glu Ile Ser Tyr Asp Leu Ala Leu Ala Glu
            405             410             415
His Leu Thr Asn Gly Gly Gly Lys Ile Ser Phe Gln Ser Leu Leu Val
            420             425             430
Asn His Gly Phe Thr Glu Thr Ala His Arg Phe Ala Lys Glu Trp Gly
        435             440             445
Asn Ser Gly Leu Pro Ile Gly Arg Leu Pro Glu Gln Pro Glu Gln Tyr
    450             455             460
Phe Gly Glu Phe Val Ala Tyr Leu Pro Ile Ile Lys Asp Ala Ile Leu
465             470                 475                 480
Glu Glu Ile Asn Arg Lys Asn Leu Asn His Ile Leu Ser Asp Ile Glu
            485             490             495
```

9

865

Met Pro Leu Glu Lys Val Leu Phe Ser Met Glu Arg Ala Gly Val Pro
500   505   510

Leu Asp Val Glu Glu Leu Ala Ile Leu Glu Ala Leu Phe Glu Thr Glu
515   520   525

Leu Ala Val Leu Thr Glu Glu Ile Tyr Asp Leu Ser Gly Arg Pro Phe
530   535   540

Asn Ile Lys Ser Pro Lys Gln Leu Ser Asp Ile Leu Tyr Asn Glu Leu
545   550   555   560

Gly Leu Arg Pro Ile Asp Lys Ala Lys Ser Thr Arg Ala Glu Val Leu
565   570   575

Glu Ala Leu Arg Ser Glu His Pro Ile Ile Glu Lys Leu Leu Ala Phe
580   585   590

Arg Thr Ile Glu Lys Leu Leu Ser Thr Tyr Val Lys Ala Leu Pro Lys
595   600   605

Gln Val Asp Ser His Thr Gln Arg Ile His Pro Ser Phe Asp Gln Thr
610   615   620

Gly Ala Val Thr Gly Arg Leu Ala Cys Arg Asp Pro Asn Leu Gln Asn
625   630   635   640

Ile Pro Ile Arg Ser Glu Arg Gly Ile Leu Leu Arg Lys Ala Phe Arg
                645   650   655

Leu Ser Glu Lys Asn Ser Tyr Phe Leu Ser Ala Asp Tyr Ser Gln Ile
        660   665   670

Glu Leu Arg Phe Leu Ala His Leu Ser Gln Asp Lys Ser Leu Lys Phe
675   680   685

Ala Phe Glu Ser Gly Glu Asp Ile His Ala Phe Thr Ala Ser Gln Val
690   695   700

Phe His Val Pro Leu Glu Gln Val Ser Lys Glu Gln Arg Met Gln Ala
705   710   715   720

Lys Thr Val Asn Phe Gly Ile Val Tyr Gly Gln Gln Ala Phe Gly Leu
                725   730   735

Ala Lys Val Leu Lys Ile Ser Ile Gly Glu Ala Gln Glu Leu Ile Gln
        740   745   750

Ala Tyr Phe Ser Arg Tyr Pro Glu Ile Ala His Phe Val Glu Glu Thr
        755   760   765

Ile Gln Gln Ala Ala Lys Asp Leu Arg Val Thr Thr Met Leu Gly Arg
770   775   780

Glu Arg Ile Ile Asp Ser Trp Asn Glu Phe Pro Gly Ser Arg Ala Ala
785   790   795   800

Ser Gly Arg Phe Ala Val Asn Thr Arg Ile Gln Gly Ser Ala Ala Glu
                805   810   815

Leu Ile Lys Leu Ala Met Leu Asp Ile Ser Gln Ala Ile Lys Gln Gln
            820   825   830

Gln Met Lys Ser Arg Met Leu Leu Gln Ile His Asp Glu Leu Leu Phe
        835   840   845

Glu Val Pro Glu Glu Glu Ile Glu Glu Met Gln Arg Leu Val Arg Glu
850   855   860

Lys Met Glu Ser Ala Met Thr Leu Ser Val Pro Ile Val Val Asn Ile
865   870   875   880

Leu Ile Gly Lys Asn Trp Ala Glu Cys
                885

<210> 615
<211> 335
<212> PRT
<213> Chlamydia pneumoniae

<400> 615
Val Val Met Lys Thr Leu Trp His Phe Val Ser Lys Ala Phe Leu Ser
1   5   10   15
Ile Val Gly Leu Cys Cys Gly Val Val Leu Ala Phe Val Val Ile Phe
            20   25   30

866

Ala Leu Ile Ala Ser Ser Leu Gly Asn Gly Asp Ala Thr Phe Val Ser
35   40   45

Leu Pro Asp Ala Gln Gly Glu Val Lys Asp Leu Gly Lys Thr Ala Pro
50   55   60

Ile Ile Ala Val Ile Glu Met Lys Asp Val Ile Ala Ser Ser Lys Asn
65   70   75   80

Thr Ala Lys Thr Ile Gln Asn Ile Leu Glu Gly Phe Glu Lys Ala Pro
85   90   95

Leu Lys Asp Arg Val Lys Gly Ile Val Ile Asp Met Asp Cys Pro Gly
100   105   110

Gly Glu Val Phe Glu Ile Asp Arg Ile Tyr Ser Met Leu Arg Phe Trp
115   120   125

Lys Glu Arg Lys Gly Phe Pro Ile Tyr Ile Tyr Val Asn Gly Leu Cys
130   135   140

Ala Ser Gly Gly Tyr Tyr Val Ser Cys Ala Ala Thr Lys Ile Tyr Ala
145   150   155   160

Thr Ser Ser Ser Leu Ile Gly Ser Ile Gly Val Arg Ser Gly Pro Phe
165   170   175

Phe Asn Val Lys Glu Gly Leu Asn Arg Tyr Gly Val Glu Ser Asp Leu
180   185   190

Leu Thr Ala Gly Lys Asp Lys Ala Pro Met Asn Pro Tyr Thr Pro Trp
195   200   205

Thr Ser His Asp Arg Glu Glu Arg Gln Ala Thr Leu Asp Phe Leu Tyr
210   215   220

Gly Gln Phe Val Asp Ile Val Thr Gln Asn Arg Pro Leu Leu Thr Lys
225   230   235   240

Glu Lys Leu Val His Thr Leu Gly Ala Arg Ile Phe Ser Pro Glu Lys
245   250   255

Ala Lys Gln Glu Gly Tyr Ile Asp Val Val Gly Ala Thr Lys Glu Gln
260   265   270

Val Leu Gln Asp Ile Val Ala Val Cys Lys Ile Glu Asp Asn Tyr Arg
275   280   285

Val Ile Gly Ser Gly Gly Asp Gly Trp Trp Lys Arg Val Ala Ser Ala
290   295   300

Ala Ala Ser Ser Pro Leu Val Thr Gly Met Ile Lys His Asp Ile Leu
305   310   315   320

Pro Leu Ser His Asp Ala Ala Tyr Ile Pro Pro Tyr Leu Ala Leu
325   330   335

<210> 616
<211> 551
<212> PRT
<213> Chlamydia pneumoniae

<400> 616
Val Phe Ile Arg His Lys Val Gly Lys Glu Phe Met Gln Ser Ser Glu
1   5   10   15

Val Lys Pro Phe Ser Arg Leu Arg Ala Tyr Leu Cys Pro Ile Tyr Lys
20   25   30

Ser Glu Phe Ser Lys Phe Val Pro Leu Phe Leu Leu Ala Phe Phe Val
35   40   45

Gly Phe Asn Tyr Cys Leu Leu Lys Asn Met Lys Asp Thr Leu Val Ile
50   55   60

Val Gly Ser Asp Ala Gly Ala Glu Val Ile Pro Phe Leu Lys Val Trp
65   70   75   80

Gly Ile Val Pro Gly Ala Val Ile Val Thr Met Val Tyr Gly Trp Leu
85   90   95

Gly Ser Arg Tyr Pro Arg Asp Thr Val Phe Tyr Cys Phe Met Ala Ala
100   105   110

Phe Leu Gly Phe Phe Phe Leu Phe Ala Val Ile Ile Tyr Pro Val Gly
115   120   125

867

```
Asp Ser Leu His Leu Asn Ser Leu Ala Asp Lys Leu Gln Glu Leu Leu
    130                 135                 140
Pro Gln Gly Leu Arg Gly Phe Ile Val Met Val Arg Tyr Trp Ser Tyr
145                 150                 155                 160
Ser Ile Tyr Tyr Val Met Ser Glu Leu Trp Ser Ser Val Val Leu Ser
                165                 170                 175
Met Leu Phe Trp Gly Leu Ala Asn Gln Ile Thr Thr Ile Thr Glu Ala
                180                 185                 190
Gly Arg Phe Tyr Ala Leu Ile Asn Thr Gly Leu Asn Leu Ser Ser Ile
                195                 200                 205
Cys Ala Gly Glu Ile Ser Tyr Trp Met Gly Lys Gln Thr Phe Val Ala
    210                 215                 220
Tyr Ser Phe Ala Cys Asp Ser Trp His Ser Val Met Leu Asn Leu Thr
225.                230                 235                 240
Met Leu Ile Thr Cys Ser Gly Leu Ile Met Ile Trp Leu Tyr Arg Arg
                245                 250                 255
Ile His His Leu Thr Ile Asp Thr Ser Ile Pro Pro Ser Arg Arg Val
                260                 265                 270
Leu Ala Glu Glu Gly Ala Ala Thr Ala Asn Leu Lys Glu Lys Lys Lys
    275                 280                 285
Pro Lys Ala Lys Ala Arg Asn Leu Phe Leu His Leu Ile Gln Ser Arg
    290                 295                 300
Tyr Leu Leu Gly Leu Ala Ile Ile Val Leu Ser Tyr Asn Leu Val Ile
305                 310                 315                 320
His Leu Phe Glu Val Val Trp Lys Asp Gln Val Ser Gln Ile Tyr Ser
                325                 330                 335
Ser His Val Glu Phe Asn Gly Tyr Met Ser Arg Ile Thr Thr Leu Ile
                340                 345                 350
Gly Val Val Ser Val Leu Ala Ala Val Leu Leu Thr Gly Gln Cys Ile
    355                 360                 365
Arg Lys Trp Gly Trp Thr Val Gly Ala Leu Val Thr Pro Leu Val Met
    370                 375                 380
Leu Val Ser Gly Leu Leu Phe Phe Gly Thr Ile Phe Ala Ala Lys Arg
385                 390                 395                 400
Asp Ile Ser Ile Phe Gly Gly Val Leu Gly Met Thr Pro Leu Ala Leu
                405                 410                 415
Ala Ala Trp Thr Gly Gly Met Gln Asn Val Leu Ser Arg Gly Thr Lys
                420                 425                 430
Phe Thr Phe Phe Asp Gln Thr Lys Glu Met Ala Phe Ile Pro Leu Ser
        435                 440                 445
Pro Glu Asp Lys Asn His Gly Lys Ala Ala Ile Asp Gly Val Val Ser
    450                 455                 460
Arg Ile Gly Lys Ser Gly Gly Ser Leu Ile Tyr Gln Gly Leu Leu Val
465                 470                 475                 480
Ile Phe Ser Ser Val Ala Ala Ser Leu Asn Val Ile Ala Leu Val Leu
                485                 490                 495
Leu Ile Ile Met Val Val Trp Ile Ala Val Val Ala Tyr Ile Gly Lys
                500                 505                 510
Glu Tyr Tyr Ser Arg Ala Ala Asp Ala Val Ala Thr Leu Lys Gln Pro
    515                 520                 525
Lys Glu Pro Ser Ser Ser Ile Val Arg Glu Ala Gln Glu Ser Val Glu
    530                 535                 540
Gln Glu Glu Met Ala Val Leu
545                 550
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                <210> 617
                <211> 172
                <212> PRT
                <213> Chlamydia pneumoniae

<400> 617

Leu Ala Lys Ile Met Arg Gln Phe Cys Asn Leu Leu Ser Leu Ser Arg
1   5   10   15

Leu Trp Leu Ala Leu Tyr Phe Cys Gln Glu Lys Leu His Ile Arg Leu
        20   25   30

Leu Ala Ile Val Gly Ala Met Leu Ser Asp Val Leu Asp Gly Tyr Leu
        35   40   45

Ala Arg Arg Tyr Lys Ala Thr Ser Arg Leu Gly Ser Ile Leu Asp Pro
    50   55   60

Ile Thr Asp Lys Val Phe Val Phe Val Cys Ile Thr Val Leu Tyr Met
65   70   75   80

Glu Gly Ser Leu Ser Ile Ala His Leu Phe Phe Ile Cys Ala Arg Asp
                85   90   95

Leu Phe Leu Ile Ile Phe Val Cys Tyr Leu Ser Leu Val Lys Gly Trp
            100   105   110

Lys Gly Tyr Asp Tyr Gly Ser Leu Phe Trp Gly Lys Ile Phe Thr Val
            115   120   125

Val Gln Phe Ile Ile Leu Leu Gly Val Thr Ala Gly Gly Glu Ile Pro
    130   135   140

Trp Thr Gly Leu Val Pro Leu Val Ala Leu Gly Phe Leu Tyr Phe Leu
145   150   155   160

Glu Arg Ile Met Asp Tyr Lys Lys Gln Phe Leu Arg
                165   170

<210> 618
<211> 478
<212> PRT
<213> Chlamydia pneumoniae

<400> 618

Thr Leu Thr Asn Tyr Glu Ser Ser Leu Leu Met Asp Lys Ser Thr Gly
1   5   10   15

Val Pro Leu Pro Ser Pro Pro His Ser Lys Glu Ser Glu Met Ile Val
        20   25   30

Leu Gly Cys Met Leu Thr Gly Val His Tyr Leu Asn Leu Ala Ala Asn
        35   40   45

Gln Leu Tyr Glu Glu Asp Phe Tyr Tyr Leu Glu His Lys Ile Ile Phe
    50   55   60

Arg Val Leu Gln Asp Ala Phe Lys Gln Asp Lys Pro Ile Asp Val His
65   70   75   80

Leu Ala Gly Glu Glu Leu Lys Arg His Asn Gln Ile Thr Val Ile Gly
                85   90   95

Gly Pro Ser Tyr Leu Ile Thr Leu Ala Glu Phe Ala Gly Thr Ala Ala
            100   105   110

Tyr Leu Glu Glu Tyr Val Asp Ile Ile Arg Ser Lys Ser Ile Leu Arg
            115   120   125

Lys Met Ile Ser Thr Ala Lys Glu Ile Glu Lys Arg Ala Leu Glu Gln
    130   135   140

Pro Lys Asn Val Ala Glu Ala Leu Asp Glu Ala Gln Asn Ser Phe Phe
145   150   155   160

Lys Ile Ser Gln Ser Thr Ser Val Ser Gln Tyr Thr Leu Val Ala Asp
            165   170   175

Lys Leu Arg Gly Leu Thr Thr Thr Thr Asp Lys Pro Tyr Leu Val Gln
            180   185   190

Leu Gln Glu Arg Gln Glu Leu Phe Leu Gln Asn Ala Gln Gly Asp Asn
            195   200   205

Lys Ser Phe Phe Thr Gly Ile Pro Thr His Phe Ile Asp Leu Asp Gln
    210   215   220

Leu Ile His Gly Phe Ser Pro Ser Asn Leu Met Ile Leu Ala Ala Arg
225   230   235   240

869

```
Pro Ala Met Gly Lys Thr Ala Leu Ala Leu Asn Ile Ala Glu Asn Leu
            245             250                 255
Cys Phe Gln Asn Arg Leu Pro Ile Gly Ile Phe Ser Leu Glu Met Thr
        260             265                 270
Val Asp Gln Leu Ile His Arg Met Ile Cys Ser Arg Ser Glu Val Asp
        275             280             285
Ser Lys Lys Ile Ser Ile Gly Asp Leu Ser Gly His Asp Phe Gln Arg
    290             295             300
Ile Val Ser Val Ile Asn Glu Met Gln Glu His Thr Leu Leu Ile Asp
305             310             315                 320
Asp Gln Pro Gly Leu Lys Val Ser Asp Leu Arg Ala Arg Ala Arg Arg
            325             330                 335
Met Lys Glu Ser Tyr Asp Ile Gln Phe Leu Ile Ile Asp Tyr Leu Gln
            340             345                 350
Leu Leu Ser Gly Ser Gly Thr Leu Arg Ala Thr Glu Ser Arg Gln Thr
        355             360             365
Glu Ile Ser Glu Ile Ser Arg Met Leu Lys Thr Leu Ala Arg Glu Leu
    370             375                 380
Asn Ile Pro Ile Leu Cys Leu Ser Gln Leu Ser Arg Lys Val Glu Asp
385             390             395                 400
Arg Ala Asn His Arg Pro Met Met Ser Asp Leu Arg Glu Ser Gly Ser
            405             410                 415
Ile Glu Gln Asp Ser Asp Leu Val Met Phe Leu Leu Arg Arg Glu Tyr
            420             425                 430
Tyr Asp Pro Asn Asp Lys Pro Gly Thr Ala Glu Leu Ile Ile Ala Lys
        435             440                 445
Asn Arg His Gly Ser Ile Gly Ser Val Pro Leu Val Phe Glu Lys Glu
    450             455                 460
Leu Ala Arg Phe Arg Asn Tyr Ser Ala Phe Glu Cys Ile Ser
465             470                 475

        <210> 619
        <211> 612
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 619
Leu Met Trp Thr His Pro Ile Ala Tyr Asp Val Ile Val Val Gly Ala
1               5                 10                  15
Gly His Ala Gly Cys Glu Ala Ala Tyr Cys Ser Ala Lys Met Gly Val
            20              25                  30
Ser Val Leu Met Leu Thr Ser Asn Leu Asp Thr Ile Ala Lys Leu Ser
        35              40                  45
Cys Asn Pro Ala Val Gly Gly Ile Gly Lys Gly His Ile Val Arg Glu
    50              55              60
Ile Asp Ala Leu Gly Gly Ile Met Ala Glu Val Thr Asp Gln Ser Gly
65              70              75                  80
Ile Gln Phe Arg Ile Leu Asn Gln Thr Lys Gly Pro Ala Val Arg Ala
            85              90                  95
Pro Arg Ala Gln Val Asp Lys Gln Leu Tyr His Ile His Met Lys Arg
            100             105                 110
Leu Leu Glu Asn Thr Pro Gly Leu His Ile Met Gln Ala Thr Val Glu
        115             120             125
Ser Leu Leu Asp Lys Glu Gly Val Ile Ser Gly Val Thr Thr Lys Glu
    130             135             140
Gly Trp Met Phe Ser Gly Lys Thr Val Val Leu Ser Ser Gly Thr Phe
145             150             155                 160
Met Arg Gly Leu Ile His Ile Gly Asp Arg Asn Phe Ser Gly Gly Arg
            165             170                 175
Leu Gly Asp Pro Ser Ser Gln Gly Leu Ser Glu Asp Leu Lys Lys Arg
            180             185                 190
```

Gly Phe Pro Ile Ser Arg Leu Lys Thr Gly Thr Pro Pro Arg Leu Leu
        195   200   205
Ala Ser Ser Ile Asn Phe Ser Cys Met Glu Glu Gln Pro Gly Asp Leu
        210   215   220
Gly Val Gly Phe Val His Arg Thr Glu Pro Phe Gln Pro Pro Leu Pro
225   230   235   240
Gln Leu Ser Cys Phe Ile Thr His Thr Met Glu Lys Thr Lys Ala Ile
            245   250   255
Ile Ser Ala Asn Leu His Arg Ser Ala Leu Tyr Gly Gly Cys Ile Glu
            260   265   270
Gly Val Gly Pro Arg Tyr Cys Pro Ser Ile Glu Asp Lys Ile Val Lys
        275   280   285
Phe Ser Asp Lys Glu Arg His Val Phe Leu Glu Pro Glu Gly Leu
        290   295   300
His Thr Gln Glu Ile Tyr Ala Asn Gly Leu Ser Thr Ser Met Pro Phe
305   310   315   320
Asp Val Gln Tyr Asp Met Ile Arg Ser Val Leu Gly Leu Glu Asn Ala
            325   330   335
Ile Ile Thr Arg Pro Ala Tyr Ala Ile Glu Tyr Asp Tyr Ile His Gly
        340   345   350
Asn Val Ile His Pro Thr Leu Glu Ser Lys Leu Ile Glu Gly Leu Phe
        355   360   365
Leu Cys Gly Gln Ile Asn Gly Thr Thr Gly Tyr Glu Glu Ala Ala Ala
370   375   380
Gln Gly Leu Ile Ala Gly Ile Asn Ala Val Asn Lys Val Phe Asn Arg
385   390   395   400
Pro Pro Phe Ile Pro Ser Arg Gln Glu Ser Tyr Ile Gly Val Met Leu
            405   410   415
Asp Asp Leu Thr Thr Gln Ile Leu Asp Glu Pro Tyr Arg Met Phe Thr
            420   425   430
Gly Arg Ala Glu His Arg Leu Leu Leu Arg Gln Asp Asn Ala Cys Ala
        435   440   445
Arg Leu Ser His Tyr Gly Tyr Glu Leu Gly Leu Leu Ser Glu Glu Arg
        450   455   460
Tyr Glu Leu Val Lys Lys Gln Asn Gln Leu Leu Glu Glu Glu Lys Val
465   470   475   480
Arg Leu Gln Lys Thr Phe Arg Gln Tyr Gly Gln Ser Val Val Ser Leu
            485   490   495
Ala Lys Ala Leu Ser Arg Pro Glu Val Ser Tyr Asp Met Leu Arg Glu
        500   505   510
Ala Phe Pro Asn Asp Ile Arg Asp Leu Gly Ala Val Leu Asn Ala Ser
        515   520   525
Leu Glu Met Glu Ile Lys Tyr Ser Gly Tyr Ile Asp Arg Gln Lys Ile
        530   535   540
Leu Ile Gln Ser Leu Glu Lys Ala Glu Ser Leu Leu Ile Pro Glu Asp
545   550   555   560
Leu Asp Tyr Lys Gln Ile Thr Ala Leu Ser Leu Glu Ala Gln Glu Lys
            565   570   575
Leu Ala Lys Phe Thr Pro Arg Thr Leu Gly Ser Ala Ser Arg Ile Ser
            580   585   590
Gly Ile Ala Ser Ala Asp Ile Gln Val Leu Met Ile Ala Leu Lys Lys
        595   600   605
His Ala His His
    610

<210> 620
<211> 237
<212> PRT
<213> Chlamydia pneumoniae

871

<400> 620

Lys Asn Met Pro Thr Thr Asn Cys Ile Phe Leu Asp Leu Arg Gly His
1   5   10   15

Ser Ile Leu His Gln Leu Gln Ile Glu Glu Ala Leu Leu Arg Val Ala
            20   25   30

Asn Gln Asn Phe Cys Ile Ile Asn Ser Gly Ala Lys Asp Ser Ile Val
        35   40   45

Leu Gly Ile Ser Arg Asn Leu Asn Gln Asp Val His Ile Ser Arg Ala
    50   55   60

Gln Ala Asp His Ile Pro Ile Ile Arg Arg Tyr Ser Gly Gly Gly Thr
65   70   75   80

Val Phe Ile Asp Ser Asn Thr Leu Met Val Ser Trp Ile Met Asn Ser
            85   90   95

Ser Glu Ala Ser Ala Gln Pro Gln Glu Leu Leu Ala Trp Thr Tyr Gly
            100   105   110

Ile Tyr Ser Pro Leu Leu Pro Asn Thr Phe Ser Ile Arg Glu Asn Asp
        115   120   125

Tyr Val Leu Gly His Lys Lys Ile Gly Gly Asn Ala Gln Tyr Ile Gln
    130   135   140

Arg His Arg Trp Val His His Thr Thr Phe Leu Trp Asp Ile Asp Leu
145   150   155   160

Asp Lys Leu Ser Tyr Tyr Leu Pro Ile Pro Gln Gln Gln Pro Thr Tyr
            165   170   175

Arg Asn Gln Arg Ser His Glu Glu Phe Leu Thr Thr Leu Arg Pro Trp
            180   185   190

Phe Pro Ser Arg Asp Asp Phe Leu Glu Arg Ile Lys Ala Ser Gly Ser
    195   200   205

Leu Leu Phe Thr Trp Glu Glu Phe Leu Asp Asn Glu Leu Glu Glu Ile
210   215   220

Leu Ala Gln Pro His Arg Lys Ala Thr Thr Val Leu Asn
225   230   235

<210> 621
<211> 150
<212> PRT
<213> Chlamydia pneumoniae

<400> 621

Arg Arg Tyr Val Tyr Thr Met Glu Gln Thr Leu Ser Ile Ile Lys Pro
1   5   10   15

Asp Ser Val Ser Lys Ala His Ile Gly Glu Ile Leu Ser Ile Phe Glu
            20   25   30

Gln Ser Gly Leu Arg Ile Ala Ala Met Lys Met Met His Leu Ser Gln
        35   40   45

Thr Glu Ala Glu Gly Phe Tyr Phe Val His Arg Glu Arg Pro Phe Phe
    50   55   60

Gln Glu Leu Val Asp Phe Met Val Ser Gly Pro Val Val Val Leu Val
65   70   75   80

Leu Glu Gly Ala Asn Ala Val Ser Arg Asn Arg Glu Leu Met Gly Ala
            85   90   95

Thr Asn Pro Ala Glu Ala Ala Ser Gly Thr Ile Arg Ala Lys Phe Gly
            100   105   110

Glu Ser Ile Gly Val Asn Ala Val His Gly Ser Asp Thr Leu Glu Asn
        115   120   125

Ala Ala Val Glu Ile Ala Tyr Phe Phe Ser Lys Ile Glu Val Val Asn
    130   135   140

Ala Ser Lys Pro Leu Val
145   150

```
<210> 622
<211> 209
<212> PRT
<213> Chlamydia pneumoniae

<400> 622
Asp Lys Met Tyr Asp Tyr Ile Arg Gly Thr Leu Thr Tyr Val His Thr
1               5                   10                  15
Gly Ala Ile Val Ile Glu Cys Gln Gly Ile Gly Tyr His Ile Ala Ile
            20                  25                  30
Thr Glu Arg Trp Ala Ile Glu Cys Ile Arg Ala Leu His Gln Asp Phe
        35                  40                  45
Leu Val Phe Thr His Val Ile Phe Arg Glu Thr Glu His Leu Leu Tyr
    50                  55                  60
Gly Phe His Ser Arg Glu Glu Arg Glu Cys Phe Arg Ile Leu Ile Ser
65                  70                  75                  80
Phe Ser Gly Ile Gly Pro Lys Leu Ala Leu Ala Ile Leu Asn Ala Leu
                85                  90                  95
Pro Leu Lys Val Leu Cys Ser Val Val Arg Ser Glu Asp Ile Arg Ala
            100                 105                 110
Leu Ala Ser Val Ser Gly Ile Gly Lys Lys Thr Ala Glu Lys Leu Met
        115                 120                 125
Val Glu Leu Lys Gln Lys Leu Pro Asp Leu Leu Pro Leu Asp Ser Arg
    130                 135                 140
Val Glu Thr Ser Gln Thr His Thr Thr Ser Ser Cys Leu Glu Glu Gly
145                 150                 155                 160
Ile Gln Ala Leu Ala Ala Leu Gly Tyr Ser Lys Ile Ala Ala Glu Arg
                165                 170                 175
Met Ile Ala Glu Ala Ile Lys Asp Leu Pro Glu Gly Ser Ser Leu Thr
            180                 185                 190
Asp Ile Leu Pro Ile Ala Leu Lys Lys Asn Phe Ser Gly Val Asn Lys
        195                 200                 205
Asp


<210> 623
<211> 188
<212> PRT
<213> Chlamydia pneumoniae

<400> 623
Leu Ser Arg Leu Gly Ser Ser Phe Lys Asp Asn Lys Phe Lys Val Phe
1               5                   10                  15
Gln Glu Ser Ile Val Ser Glu Leu Ile Ile Gly Val Asp Pro Gly Thr
            20                  25                  30
Ile Val Ala Gly Tyr Ala Ile Ile Ala Val Glu Gln Arg Tyr Gln Leu
        35                  40                  45
Arg Pro Tyr Ser Tyr Gly Ala Ile Arg Leu Ser Ser Asp Met Pro Leu
    50                  55                  60
Pro Met Arg Tyr Lys Thr Leu Phe Glu Gln Leu Ser Gly Val Leu Asp
65                  70                  75                  80
Asp Thr Gln Pro Asn Ala Met Val Leu Glu Thr Gln Phe Val Asn Lys
                85                  90                  95
Asn Pro Gln Ser Thr Met Lys Leu Ala Met Ala Arg Gly Ile Val Leu
            100                 105                 110
Leu Ala Ala Ala Gln Arg Asp Ile Leu Ile Phe Glu Tyr Ala Pro Asn
        115                 120                 125
Val Ala Lys Lys Ala Val Val Gly Lys Gly His Ala Ser Lys Arg Gln
    130                 135                 140
Val Gln Val Met Val Ser Lys Ile Leu Asn Val Pro Glu Val Leu His
145                 150                 155                 160
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Pro Ser Asn Glu Asp Ile Ala Asp Ala Phe Ala Leu Ala Ile Cys His
                165   170   175
Thr His Val Ala Arg Ser Pro Leu Cys Gly Val Arg
            180   185

          <210> 624
          <211> 323
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 624
Arg Tyr Ser Val Arg Leu Leu Ser Ile Leu Lys Leu His Leu Phe Ser
  1   5   10   15
Leu Arg Ser Ser Ser Ser Leu Ser Pro His Tyr Tyr His Ser Cys Ser
            20   25   30
Arg Ser Met Leu His Leu Leu Cys Arg Trp Lys Asp Ala Asp Ile Met
        35   40   45
Glu Trp Gln Gln Ile Cys Asn Ile Leu Ser Gly Val Cys Ser Arg Met
    50   55   60
Ser Gly Lys Leu Val Ser Leu Gln Lys Glu Thr Gln Asp Ser Cys His
65   70   75   80
Gln Glu His Glu Arg Ile His Leu Gln Tyr Arg Glu Gln Leu Ser Ala
                85   90   95
Leu Glu Glu Glu Tyr Arg Arg Arg Glu Glu Ala Lys Asn Gln Asp Leu
            100   105   110
Glu Lys Leu Gln Gln Glu Asn Thr Trp Leu Gln Asn Arg Leu Ala Glu
        115   120   125
Lys Leu Gln Gln Ile Arg His Gln Ser Asp Ile Ile Asp Glu Ile Lys
    130   135   140
Lys Glu Leu Leu Gln Ser Val Gln Arg Thr Glu Ile Ser Glu Gly Arg
145   150   155   160
Arg Leu Cys Tyr Glu His Lys Ile Lys Gln Leu Glu Glu Gln Leu Gln
            165   170   175
Arg Tyr Val Ser Gln His Gly Ala Pro Ser Ile Glu Ile Glu Glu Asp
            180   185   190
Lys Ser Ser Ala Ala Tyr Ala Glu Ile Asn Arg Leu Lys Lys Ser Leu
    195   200   205
Ile Asp Leu Gln Gln Glu Lys Asp Ile Tyr Ile Lys Thr Tyr His Ser
    210   215   220
Glu Ile Ala Lys Leu Arg Glu Lys Leu Gln Arg Gln Glu Gly Ala Gln
225   230   235   240
Thr Ser Ser Glu Val Cys Ser Ile Glu Lys Leu Thr Glu Val Gln Thr
            245   250   255
Asp Leu Ala Glu Lys Lys Lys Ala Ile Ala Leu Leu Gln Asp Ile Val
            260   265   270
Glu Asp Gln Tyr Cys Gln Leu Arg Asp Leu His Lys Glu Lys Gly Met
    275   280   285
Ala Met Pro Ser Asn Thr Lys Leu Asp His Leu Lys Gly Leu Leu Gly
    290   295   300
Lys Glu Pro Glu Ser Glu Val Asp Val Val Phe Ser Glu Ser Lys Ser
305   310   315   320
Leu Gly Ser

          <210> 625
          <211> 283
          <212> PRT
          <213> Chlamydia pneumoniae

874

<400> 625
Ile Lys Gly Tyr Asn Tyr Val Tyr Phe Thr Arg Asp Pro Val Ile Glu
1   5   10   15
Thr Val Ile Thr Ser Arg Glu Gly Tyr Lys Leu Ser Val Arg Asn Thr
            20   25   30
Lys His Phe Ser Gln Asp Pro Phe Met Val Glu Ala Ile Glu Val Ile
        35   40   45
Ser Leu Gly Asn Ile Cys Phe Phe Arg Asn Cys Asp His Ser Lys Pro
    50   55   60
Phe Leu Val Pro Ala Gly Asp Tyr Glu Val Met Glu Val Arg Asp Thr
65   70   75   80
Lys Ile Asn Leu Lys Ala Val Gly Leu Asp Arg Gly Val Lys Ile Ala
                85   90   95
Gly Gly Arg Glu Ala Leu Ile Lys Leu Thr Lys Ser Thr Pro Leu Pro
            100   105   110
Val Ile Asp Glu Lys Pro Leu Ala Asp Ser Pro Glu Glu Gly Thr Glu
        115   120   125
Pro Thr Ser Pro Ser Lys Lys Glu Lys Lys Glu Ala Arg Lys Asp Ser
    130   135   140
Phe Lys Gly Glu Lys Trp Lys Glu Lys Lys Leu Ser Arg Arg Arg
145   150   155   160
Asn His Lys Glu Ile Ala Glu Val Thr Gly Ala Ser Gln Glu Ile Leu
                165   170   175
Asp Thr Val Lys Glu Glu Leu Trp Glu Glu Ser Gln Glu Asn Glu Ile
            180   185   190
Val Glu Gln Lys Lys Phe Ser Leu Leu Pro Pro Pro Ala Lys Leu Ile
        195   200   205
Ser Glu Val Ile Ser Gln Thr Val Val Asp Pro Val Val Thr Ser Ala
    210   215   220
Asp Leu Asn Glu Ser Leu Gln Ala Leu Val Arg Glu Ser Ser Asp Leu
225   230   235   240
Ile Asn Ala Leu Leu Ser Ala Asp Asp Ala Ile His Phe Pro Glu Thr
                245   250   255
Glu Glu Glu Pro Thr Ser Ala Ser Phe Glu Glu Ser Ser Ala Met Phe
            260   265   270
Phe Pro Glu Thr Ser Ser Ala Thr Glu Glu Glu
    275   280

        <210> 626
        <211> 336
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 626
Ala Met Lys Val Val Ile Asn Gly Phe Gly Arg Ile Gly Arg Leu Val
1   5   10   15
Leu Arg Gln Ile Leu Lys Arg Asn Ser Ser Val Glu Val Leu Ala Ile
            20   25   30
Asn Asp Leu Val Pro Gly Asp Ala Leu Thr Tyr Leu Phe Lys Phe Asp
        35   40   45
Ser Thr His Gly Arg Phe Pro Glu Asp Val Arg Cys Glu Ala Asp His
    50   55   60
Leu Ile Val Gly Lys Arg Lys Ile Gln Phe Leu Ser Glu Arg Asn Val
65   70   75   80
Gln Asn Leu Pro Trp Lys Asp Leu Gly Val Asp Leu Val Ile Glu Cys
                85   90   95
Thr Gly Leu Phe Thr Lys Lys Glu Asp Ala Glu Lys His Ile Gln Ala
            100   105   110
Gly Ala Lys Arg Val Leu Ile Ser Ala Pro Gly Lys Gly Asp Ile Pro
        115   120   125

875

```
Thr Phe Val Met Gly Val Asn His Lys Thr Phe Asn Pro Glu Lys Asp
    130                 135                 140
Phe Val Ile Ser Asn Ala Ser Cys Thr Thr Asn Cys Leu Ala Pro Ile
145                 150                 155                 160
Ala Lys Val Leu Leu Asp Asn Phe Gly Ile Thr Glu Gly Leu Met Thr
                165                 170                 175
Thr Val His Ala Ala Thr Ala Thr Gln Leu Val Val Asp Gly Pro Ser
                180                 185                 190
Lys Lys Asp Trp Arg Gly Gly Arg Gly Cys Leu Gln Asn Ile Ile Pro
                195                 200                 205
Ala Ser Thr Gly Ala Ala Lys Ala Val Thr Leu Cys Leu Pro Glu Leu
    210                 215                 220
Lys Gly Lys Leu Thr Gly Met Ala Phe Arg Val Pro Ile Glu Asp Val
225                 230                 235                 240
Ser Val Val Asp Leu Thr Val Arg Leu Asp Lys Ser Thr Thr Tyr Asp
                245                 250                 255
Asp Ile Cys Lys Ala Met Lys Gln Ala Ser Glu Thr Asp Leu Lys Gly
                260                 265                 270
Ile Leu Asp Tyr Thr Asp Glu Gln Val Val Ser Ser Asp Phe Ile Gly
                275                 280                 285
Ser Glu Tyr Ser Ser Ile Phe Asp Ala Leu Ala Gly Ile Ala Leu Asn
    290                 295                 300
Asp Arg Phe Phe Lys Leu Val Ala Trp Tyr Asp Asn Glu Thr Gly Tyr
305                 310                 315                 320
Ala Thr Arg Ile Val Asp Leu Leu Glu Tyr Val Glu Lys Asn Ser Lys
                325                 330                 335


    <210> 627
    <211> 143
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 627
Val Met Gln His Ala Arg Lys Lys Phe Arg Val Gly Arg Thr Ser Ser
 1           5                   10                  15
His Asn Arg Cys Met Leu Ala Asn Met Leu Lys Ser Leu Ile His Tyr
            20                  25                  30
Glu Arg Ile Glu Thr Thr Leu Pro Lys Ala Lys Glu Leu Arg Arg His
        35                  40                  45
Ala Asp Lys Met Ile Thr Leu Ala Lys Lys Asn Ser Leu Ala Ala Arg
    50                  55                  60
Arg Ile Ala Ile Gly Arg Leu Met Val Arg Tyr Asn Lys Leu Thr Ser
65                  70                  75                  80
Lys Glu Ala Arg Gln Ala Lys Gly Gly Asp Thr Ser Val Tyr Asn Val
            85                  90                  95
Asp Arg Leu Val Asn Lys Leu Phe Asp Glu Leu Gly Asn Arg Phe
            100                 105                 110
Val Glu Arg Lys Gly Gly Tyr Thr Arg Ile Leu Lys Leu Gln Asn Arg
    115                 120                 125
Ile Gly Asp Asn Ala Gln Lys Cys Ile Ile Glu Phe Leu Ala Ser
    130                 135                 140


    <210> 628
    <211> 392
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 628
Trp Leu Pro Ala Lys Lys Lys Ala Gln Ser Val Val Leu Gly Lys Glu
 1           5                   10                  15
```

```
Lys Gly Met Ser Asp Asn Ala His Asn Leu Leu Tyr Asp Lys Phe Glu
            20                  25                  30
Leu Pro Glu Ala Val Lys Met Leu Pro Val Glu Gly Leu Pro Ile Asp
        35                  40                  45
Lys His Ala Arg Phe Ile Ala Glu Pro Leu Glu Arg Gly Met Gly His
    50                  55                  60
Thr Leu Gly Asn Ala Leu Arg Arg Ala Leu Leu Ile Gly Leu Glu Ala
65                  70                  75                  80
Pro Ala Ile Ile Ser Phe Ala Met Thr Gly Val Leu His Glu Tyr Met
                85                  90                  95
Ala Ile Glu Gly Val Ile Glu Asp Val Thr Asn Ile Ile Leu Asn Leu
            100                 105                 110
Lys Gly Ala Leu Leu Lys Lys Tyr Pro Met Gln Asp Ser Ser Leu Gly
            115                 120                 125
Arg Thr Thr Gln Val Leu Lys Ala Ser Ile Ser Ile Asp Ala Ser Asp
    130                 135                 140
Leu Ala Ala Ala Asn Gly Gln Lys Glu Val Thr Leu Gln Asp Leu Leu
145                 150                 155                 160
Gln Glu Gly Asp Phe Glu Ala Val Asn Pro Asp Gln Val Ile Phe Thr
                165                 170                 175
Val Thr Gln Pro Ile Gln Leu Glu Val Val Leu Arg Ile Ala Phe Gly
            180                 185                 190
Arg Gly Tyr Thr Pro Ser Glu Arg Ile Val Leu Glu Asp Lys Gly Val
            195                 200                 205
Tyr Glu Ile Val Leu Asp Ala Ala Phe Ser Pro Val Thr Leu Val Asn
    210                 215                 220
Tyr Phe Val Glu Asp Thr Arg Val Gly Gln Asp Thr Asp Phe Asp Arg
225                 230                 235                 240
Leu Val Leu Ile Val Glu Thr Asp Gly Arg Val Thr Pro Lys Glu Ala
                245                 250                 255
Leu Ala Phe Ser Thr Gln Ile Leu Thr Lys His Phe Ser Ile Phe Glu
                260                 265                 270
Asn Met Asp Glu Lys Lys Ile Val Phe Glu Glu Ala Ile Ser Ile Glu
    275                 280                 285
Lys Glu Asn Lys Asp Asp Ile Leu His Lys Leu Ile Leu Gly Ile Asn
    290                 295                 300
Glu Ile Glu Leu Ser Val Arg Ser Thr Asn Cys Leu Ser Asn Ala Asn
305                 310                 315                 320
Ile Glu Thr Ile Gly Glu Leu Val Ile Met Pro Glu Pro Arg Leu Leu
                325                 330                 335
Gln Phe Arg Asn Phe Gly Lys Lys Ser Leu Cys Glu Ile Lys Asn Lys
            340                 345                 350
Leu Lys Glu Met Lys Leu Glu Leu Gly Met Asp Leu Thr Gln Phe Gly
            355                 360                 365
Val Gly Leu Asp Asn Val Lys Glu Lys Met Lys Trp Tyr Ala Glu Lys
370                 375                 380
Ile Arg Ala Lys Asn Thr Lys Gly
385                 390

        <210> 629
        <211> 140
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 629
Phe Leu Ile Arg Ser Arg Val Leu Val Lys Asn Gln Ala Gln Ala Lys
1               5                   10                  15
Lys Ser Val Lys Arg Lys Gln Leu Lys Asn Ile Pro Ser Gly Val Val
            20                  25                  30
His Val Lys Ala Thr Phe Asn Asn Thr Ile Val Ser Ile Thr Asp Pro
    35                  40                  45
```

877

```
Ala Gly Asn Val Ile Ser Trp Ala Ser Ala Gly Lys Val Gly Tyr Ser
    50                  55                  60
Gly Ser Arg Lys Ser Ser Ala Phe Ala Ala Thr Val Ala Ala Gln Asp
65                  70                  75                  80
Ala Ala Lys Thr Ala Met Asn Ser Gly Leu Lys Glu Val Glu Val Cys
                85                  90                  95
Leu Lys Gly Thr Gly Ala Gly Arg Glu Ser Ala Val Arg Ala Leu Ile
            100                 105                 110
Ser Ala Gly Leu Val Val Ser Val Ile Arg Asp Glu Thr Pro Val Pro
        115                 120                 125
His Asn Gly Cys Arg Pro Arg Lys Arg Arg Arg Val
    130                 135                 140
```

```
<210> 630
<211> 133
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 630
Asp Ala Tyr Thr Ile Leu Arg Glu Ala Gln Arg Met Pro Arg Ile Ile
1                   5                   10                  15
Gly Ile Asp Ile Pro Ala Lys Lys Lys Leu Lys Ile Ser Leu Thr Tyr
                20                  25                  30
Ile Tyr Gly Ile Gly Ser Ala Arg Ser Asp Glu Ile Ile Lys Lys Leu
        35                  40                  45
Lys Leu Asp Pro Glu Ala Arg Ala Ser Glu Leu Thr Glu Glu Glu Val
    50                  55                  60
Gly Arg Leu Asn Ser Leu Leu Gln Ser Glu Tyr Thr Val Glu Gly Asp
65                  70                  75                  80
Leu Arg Arg Arg Val Gln Ser Asp Ile Lys Arg Leu Ile Ala Ile His
                85                  90                  95
Ser Tyr Arg Gly Gln Arg His Arg Leu Ser Leu Pro Val Arg Gly Gln
            100                 105                 110
Arg Thr Lys Thr Asn Ser Arg Thr Arg Lys Gly Lys Arg Lys Thr Val
        115                 120                 125
Ala Gly Lys Lys Lys
    130
```

```
<210> 631
<211> 465
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 631
Lys Ile Arg Leu Phe Arg Pro Tyr Met Thr Thr Leu Arg Gln Phe Phe
1                   5                   10                  15
Leu Ile Thr Glu Leu Arg Gln Lys Leu Phe Tyr Thr Phe Ala Leu Leu
                20                  25                  30
Thr Ala Cys Arg Val Gly Val Phe Ile Pro Val Pro Gly Ile Asn Gly
            35                  40                  45
Glu Leu Ala Val Ala Tyr Phe Lys Gln Leu Leu Gly Ser Gly Gln Asn
    50                  55                  60
Leu Phe Gln Leu Ala Asp Ile Phe Ser Gly Gly Ala Phe Ala Gln Met
65                  70                  75                  80
Thr Val Ile Ala Leu Gly Val Val Pro Tyr Ile Ser Ala Ser Ile Ile
                85                  90                  95
Val Gln Leu Phe Leu Val Phe Met Pro Ala Leu Gln Arg Glu Met Arg
            100                 105                 110
Glu Ser Ser Asp Gln Gly Lys Arg Arg Ile Gly Arg Leu Thr Arg Leu
        115                 120                 125
```

878

```
Phe Thr Val Ala Leu Ala Val Ile Gln Ser Leu Leu Phe Ala Lys Phe
    130                 135                 140
Ala Leu Arg Met Asn Leu Thr Ile Pro Gly Ile Val Leu Pro Thr Leu
145                 150                 155                 160
Leu Ser Ser Lys Leu Phe Gly Val Pro Trp Ile Phe Tyr Ile Thr Thr
                165                 170                 175
Val Val Val Met Thr Thr Gly Thr Leu Leu Leu Met Trp Ile Gly Glu
                180                 185                 190
Gln Ile Ser Asp Lys Gly Ile Gly Asn Gly Ile Ser Leu Ile Ile Ala
            195                 200                 205
Leu Gly Ile Leu Ser Ser Phe Pro Ser Val Leu Gly Ser Ile Val Asn
    210                 215                 220
Lys Leu Asn Leu Gly Ser Gln Asp Ser Ser Asp Leu Gly Leu Ile Ser
225                 230                 235                 240
Ile Leu Ile Leu Ala Leu Val Phe Val Phe Val Leu Ile Thr Thr Ile
                245                 250                 255
Leu Ile Ile Glu Gly Val Arg Lys Ile Pro Val Gln Tyr Ala Arg Arg
                260                 265                 270
Val Ile Gly Arg Arg Glu Val Pro Gly Gly Gly Ser Tyr Leu Pro Leu
            275                 280                 285
Lys Val Asn Tyr Ala Gly Val Ile Pro Val Ile Phe Ala Ser Ser Leu
    290                 295                 300
Leu Met Phe Pro Ala Thr Ile Gly Gln Phe Ile Ala Ser Glu Ser Ser
305                 310                 315                 320
Trp Met Lys Arg Ile Ala Ala Leu Leu Ala Pro Gly Ser Leu Val Tyr
                325                 330                 335
Ser Ile Cys Tyr Val Leu Leu Ile Ile Phe Phe Thr Tyr Phe Trp Thr
                340                 345                 350
Ala Thr Gln Phe His Pro Glu Gln Ile Ala Ser Glu Met Lys Lys Asn
    355                 360                 365
Asn Ala Phe Ile Pro Gly Ile Arg Gln Gly Lys Pro Thr Gln His Tyr
    370                 375                 380
Leu Glu Tyr Thr Met Asn Arg Val Thr Leu Leu Gly Ala Leu Phe Leu
385                 390                 395                 400
Ala Ala Ile Ala Ile Leu Pro Ser Leu Leu Gly Cys Leu Leu Arg Val
                405                 410                 415
Asp Ser Asn Val Ser Tyr Phe Leu Gly Gly Thr Ala Met Leu Ile Val
            420                 425                 430
Val Gly Val Val Leu Asp Thr Met Lys Gln Val Asp Ala Phe Leu Leu
    435                 440                 445
Met Arg Arg Tyr Asp Ser Val Leu Lys Thr Asp Arg Thr Lys Gly Arg
    450                 455                 460
His
465
```

        <210> 632
        <211> 144
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 632
```
Met Ile Lys Leu Glu Ser Leu Phe Asp Ile Ser Glu Arg Lys Arg Arg
1               5                   10                  15
Lys Lys Leu Leu Gly Arg Gly Pro Ser Ser Gly His Gly Lys Thr Ser
                20                  25                  30
Gly Arg Gly His Lys Gly Asp Gly Ser Arg Ser Gly Tyr Lys Arg Arg
                35                  40                  45
Phe Gly Tyr Glu Gly Gly Gly Val Pro Leu Tyr Arg Arg Val Pro Thr
    50                  55                  60
Arg Gly Phe Ser His Lys Arg Phe Asp Lys Cys Val Glu Glu Ile Thr
65                  70                  75                  80
```

```
Thr Gly Arg Leu Ala Glu Leu Phe Gln Glu Gly Glu Ala Ile Thr Leu
              85                  90                  95
Asp Ala Leu Lys Ala Lys Lys Ala Ile Ala Arg Gln Ala Val Arg Val
              100                 105                 110
Lys Val Ile Leu Lys Gly Asp Leu Glu Lys Thr Phe Val Trp Gln Asp
              115                 120                 125
Thr Ala Val Val Leu Ser Gln Gly Val Gln Asn Leu Leu Gly Ile Thr
              130                 135                 140
```

```
        <210> 633
        <211> 167
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 633
Glu Glu Met Ser Leu Ser Lys Asn Ser His Lys Glu Asp Gln Leu Glu
1               5                   10                  15
Glu Lys Val Leu Val Val Asn Arg Cys Ser Lys Val Val Lys Gly Gly
              20                  25                  30
Arg Lys Phe Ser Phe Ser Ala Leu Ile Leu Val Gly Asp Gly Lys Gly
              35                  40                  45
Arg Leu Gly Tyr Gly Phe Ala Lys Ala Asn Glu Leu Thr Asp Ala Ile
              50                  55                  60
Arg Lys Gly Gly Glu Ala Ala Lys Lys Asn Leu Met Lys Ile Glu Ala
65                  70                  75                  80
Leu Glu Asp Gly Ser Ile Pro His Glu Val Leu Val His His Asp Gly
              85                  90                  95
Ala Gln Leu Leu Leu Lys Pro Ala Lys Pro Gly Thr Gly Ile Val Ala
              100                 105                 110
Gly Ser Arg Ile Arg Leu Ile Leu Glu Met Ala Gly Ile Lys Asp Ile
              115                 120                 125
Val Ala Lys Ser Phe Gly Ser Asn Asn Pro Met Asn Gln Val Lys Ala
              130                 135                 140
Ala Phe Lys Ala Leu Thr Gly Leu Ser Pro Arg Lys Asp Leu Leu Arg
145                 150                 155                 160
Arg Gly Ala Ala Ile Asn Asp
              165
```

```
        <210> 634
        <211> 176
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 634
Lys Gly Leu Ile Ser Ser Trp Leu Val Asn Leu Leu Gln Val Phe Ala
1               5                   10                  15
Pro Asn Val Leu Leu Asn Leu Ile Lys Val Arg Glu Phe Val Met Lys
              20                  25                  30
Met Asn Met Ser Val Val Lys Leu Val Lys Leu Arg Lys Gln Ala Lys
              35                  40                  45
Asn Arg Ser Arg Val Met Glu Ser Ser Leu Cys Lys Lys Ser Leu Met
              50                  55                  60
Lys Arg Arg Arg Ala Leu Arg Val Arg Lys Val Leu Lys Gly Ser Pro
65                  70                  75                  80
Thr Lys Pro Arg Leu Ser Val Val Lys Thr Asn Lys His Ile Tyr Val
              85                  90                  95
Gln Leu Ile Asp Asp Ser Ile Gly Lys Thr Leu Ala Ser Val Ser Thr
              100                 105                 110
Leu Ser Lys Leu Asn Lys Ser Gln Gly Leu Thr Lys Lys Asn Gln Glu
              115                 120                 125
```

880

```
Val Ala Lys Val Leu Gly Thr Gln Ile Ala Glu Leu Gly Lys Asn Leu
    130                 135             140
Gln Leu Asp Arg Val Val Phe Asp Arg Gly Pro Phe Lys Tyr His Gly
145                 150                 155                 160
Ile Val Ser Met Val Ala Asp Gly Ala Arg Glu Gly Gly Leu Gln Phe
                165                 170                 175


        <210> 635
        <211> 184
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 635
Ser Met Ser Arg Lys Ala Arg Glu Pro Ile Leu Leu Pro Gln Gly Val
  1             5                 10                  15
Glu Val Ser Ile Gln Asp Asp Lys Ile Ile Val Lys Gly Pro Lys Gly
                20              25                  30
Ser Leu Thr Gln Lys Ser Val Lys Glu Val Glu Ile Thr Leu Lys Asp
        35                  40                  45
Asn Ser Ile Phe Val His Ala Ala Pro His Val Val Asp Arg Pro Ser
    50                  55                  60
Cys Met Gln Gly Leu Tyr Trp Ala Leu Ile Ser Asn Met Val Gln Gly
65                  70                  75                  80
Val His Leu Gly Phe Glu Lys Arg Leu Glu Met Ile Gly Val Gly Phe
                85                  90                  95
Arg Ala Ser Val Gln Gly Ala Phe Leu Asp Leu Ser Ile Gly Val Ser
                100                 105                 110
His Pro Thr Lys Ile Pro Ile Pro Ser Thr Leu Gln Val Ser Val Glu
        115                 120                 125
Lys Asn Thr Leu Ile Ser Val Lys Gly Leu Asp Lys Gln Leu Val Gly
    130                 135                 140
Glu Phe Ala Ala Ser Ile Arg Ala Lys Arg Pro Pro Glu Pro Tyr Lys
145                 150                 155                 160
Gly Lys Gly Ile Arg Tyr Glu Asn Glu Tyr Val Arg Arg Lys Ala Gly
                165                 170                 175
Lys Ala Ala Lys Thr Gly Lys Lys
                180


        <210> 636
        <211> 143
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 636
Glu Ser Ser Ile Lys Arg Lys Arg Ile Tyr Met Gly Met Thr Ser Asp
  1             5                 10                  15
Ser Ile Ala Asp Leu Leu Thr Arg Ile Arg Asn Ala Leu Met Ala Glu
                20              25                  30
His Leu Tyr Val Asp Val Glu His Ser Lys Met Arg Glu Ala Ile Val
        35                  40                  45
Lys Ile Leu Lys His Lys Gly Phe Val Ala His Tyr Leu Val Lys Glu
    50                  55                  60
Glu Asn Arg Lys Arg Ala Met Arg Val Phe Leu Gln Tyr Ser Asp Asp
65                  70                  75                  80
Arg Lys Pro Val Ile His Gln Leu Lys Arg Val Ser Lys Pro Ser Arg
                85                  90                  95
Arg Val Tyr Val Ser Ala Ala Lys Ile Pro Tyr Val Phe Gly Asn Met
                100                 105                 110
Gly Ile Ser Val Leu Ser Thr Ser Gln Gly Val Met Glu Gly Ser Leu
        115                 120                 125
```

881

```
Ala Arg Ser Lys Asn Ile Gly Gly Glu Leu Leu Cys Leu Val Trp
    130                 135                 140
```

```
        <210> 637
        <211> 186
        <212> PRT
        <213> Chlamydia pneumoniae
```

```
        <400> 637
Gly Glu Arg Lys Ala Asn Met Ser Arg Leu Lys Lys Phe Tyr Thr Glu
  1               5                 10                15
Glu Ile Arg Lys Ser Leu Phe Glu Lys Phe Gly Tyr Ala Asn Lys Met
            20                25                30
Gln Ile Pro Val Leu Lys Lys Ile Val Leu Ser Met Gly Leu Ala Glu
            35                40                45
Ala Ala Lys Asp Lys Asn Leu Phe Gln Ala His Leu Glu Glu Leu Thr
    50                55                60
Met Ile Ser Gly Gln Lys Pro Leu Val Thr Lys Ala Arg Asn Ser Ile
65                70                75                80
Ala Gly Phe Lys Leu Arg Glu Gly Gln Gly Ile Gly Ala Lys Val Thr
            85                90                95
Leu Arg Gly Ile Arg Met Tyr Asp Phe Met Asp Arg Phe Cys Asn Ile
            100               105               110
Val Ser Pro Arg Ile Arg Asp Phe Arg Gly Phe Ser Asn Lys Gly Asp
            115               120               125
Gly Arg Gly Cys Tyr Ser Val Gly Leu Asp Asp Gln Gln Ile Phe Pro
    130               135               140
Glu Ile Asn Leu Asp Arg Val Lys Arg Thr Gln Gly Leu Asn Ile Thr
145               150               155               160
Trp Val Thr Thr Ala Gln Thr Asp Asp Glu Cys Thr Thr Leu Leu Glu
            165               170               175
Leu Met Gly Leu Arg Phe Lys Lys Ala Gln
            180               185
```

```
        <210> 638
        <211> 117
        <212> PRT
        <213> Chlamydia pneumoniae
```

```
        <400> 638
Phe Lys Glu Lys Glu Val Met Lys Lys Gln Asn Ile Arg Val Gly Asp
  1               5                 10                15
Lys Val Phe Ile Leu Ala Gly Asn Asp Lys Gly Lys Glu Gly Lys Val
            20                25                30
Leu Ser Leu Thr Glu Asp Lys Val Val Val Glu Gly Val Asn Val Arg
            35                40                45
Ile Lys Asn Ile Lys Arg Ser Gln Gln Asn Pro Lys Gly Lys Arg Ile
    50                55                60
Ser Ile Glu Ala Pro Ile His Ile Ser Asn Val Arg Leu Thr Ile Ala
65                70                75                80
Gly Glu Pro Ala Lys Leu Ser Val Lys Val Thr Glu Gln Gly Arg Glu
            85                90                95
Leu Trp Gln Arg Arg Pro Asp Gly Thr Ser Gln Leu Tyr Arg Leu Val
            100               105               110
Arg Gly Lys Lys Gly
    115
```

```
        <210> 639
        <211> 125
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 639

Ile Glu Ile Met Ile Gln Gln Glu Ser Gln Leu Lys Val Ala Asp Asn
1   5   10   15
Thr Gly Ala Lys Lys Val Lys Cys Phe Lys Val Leu Gly Gly Ser Arg
            20   25   30
Arg Arg Tyr Ala Thr Val Gly Asp Val Ile Val Cys Ser Val Arg Asp
        35   40   45
Val Glu Pro Asn Ser Ser Ile Lys Lys Gly Asp Val Ile Lys Ala Val
    50   55   60
Ile Val Arg Thr Arg Arg His Ile Thr Arg Lys Asp Gly Ser Thr Leu
65   70   75   80
Lys Phe Asp Thr Asn Ser Cys Val Ile Ile Asp Asp Lys Gly Asn Pro
                85   90   95
Lys Gly Thr Arg Ile Phe Gly Pro Val Ala Arg Glu Ile Arg Asp Arg
            100   105   110
Gly Phe Ile Lys Ile Ser Ser Leu Ala Pro Glu Val Ile
        115   120   125

<210> 640
<211> 94
<212> PRT
<213> Chlamydia pneumoniae

<400> 640

Asn Lys Lys Glu Lys Val Lys Ser Met Ala Ser Glu Pro Arg Gly Ser
1   5   10   15
Arg Lys Val Lys Ile Gly Val Val Val Ser Ala Lys Met Glu Lys Thr
            20   25   30
Val Val Val Arg Val Glu Arg Ile Phe Ser His Pro Gln Tyr Leu Lys
        35   40   45
Val Val Arg Ser Ser Lys Lys Tyr Tyr Ala His Thr Glu Leu Lys Val
    50   55   60
Ser Glu Gly Asp Lys Val Lys Ile Gln Glu Thr Arg Pro Leu Ser Lys
65   70   75   80
Leu Lys Arg Trp Arg Val Ile Glu His Val Gly Val Val Ser
                85   90

<210> 641
<211> 79
<212> PRT
<213> Chlamydia pneumoniae

<400> 641

Ala Ser Gly Lys Gly Ile Asn Met Ala Ala Lys Lys Asp Leu Leu Thr
1   5   10   15
Gln Leu Arg Gly Lys Ser Asp Asp Asp Leu Asp Ala Tyr Val His Glu
            20   25   30
Asn Lys Lys Ala Leu Phe Ala Leu Arg Ala Glu Asn Leu Leu Gln Asn
        35   40   45
Lys Val Val Lys Val His Met Phe Ser Thr His Lys Lys Asn Ile Ala
    50   55   60
Arg Ala Leu Thr Val Lys Gln Glu Arg Lys Gly Lys Val His Gly
65   70   75

<210> 642
<211> 140
<212> PRT
<213> Chlamydia pneumoniae

<400> 642
```
Ile Ile Met Leu Met Pro Lys Arg Thr Lys Phe Arg Lys Gln Gln Lys
1               5                   10                  15
Gly Gln Phe Ala Gly Leu Ser Lys Gly Ala Thr Phe Val Asp Phe Gly
        20                  25                  30
Glu Tyr Ala Met Gln Thr Leu Glu Arg Gly Trp Val Thr Ser Arg Gln
        35                  40                  45
Ile Glu Ala Cys Arg Val Ala Ile Asn Arg Tyr Leu Lys Arg Arg Gly
        50                  55                  60
Lys Val Trp Ile Arg Ile Phe Pro Asp Lys Ser Val Thr Lys Lys Pro
65                  70                  75                  80
Ala Glu Thr Arg Met Gly Lys Gly Lys Gly Ala Pro Asp His Trp Val
                85                  90                  95
Ala Val Val Arg Pro Gly Arg Ile Leu Phe Glu Val Ala Asn Val Ser
                100                 105                 110
Lys Glu Asp Ala Gln Asp Ala Leu Arg Arg Ala Ala Ala Lys Leu Gly
        115                         120                 125
Ile Lys Thr Arg Phe Val Lys Arg Val Glu Arg Val
        130                 135                 140
```

<210> 643
<211> 228
<212> PRT
<213> Chlamydia pneumoniae

<400> 643
```
Lys Gly Arg Arg Ile Met Gly Gln Lys Gly Cys Pro Ile Gly Phe Arg
1               5                   10                  15
Thr Gly Val Thr Lys Arg Trp Arg Ser Leu Trp Tyr Gly Asn Lys Gln
        20                  25                  30
Glu Phe Gly Lys Phe Leu Ile Glu Asp Val Arg Ile Arg Gln Phe Leu
        35                  40                  45
Arg Lys Lys Pro Ser Cys Gln Gly Ala Ala Gly Phe Val Val Arg Arg
        50                  55                  60
Met Ser Gly Lys Ile Glu Val Thr Ile Gln Thr Ala Arg Pro Gly Leu
65                  70                  75                  80
Val Ile Gly Lys Lys Gly Ala Glu Val Asp Leu Leu Lys Glu Glu Leu
                85                  90                  95
Arg Ala Leu Thr Gly Lys Glu Val Trp Leu Glu Ile Ala Glu Ile Lys
                100                 105                 110
Arg Pro Glu Leu Asn Ala Lys Leu Val Ala Asp Asn Ile Ala Arg Gln
        115                 120                 125
Ile Glu Arg Arg Val Ser Phe Arg Arg Ala Met Lys Lys Ala Met Gln
        130                 135                 140
Ser Val Met Asp Ala Gly Ala Val Gly Val Lys Ile Gln Val Ser Gly
145                 150                 155                 160
Arg Leu Ala Gly Ala Glu Ile Ala Arg Ser Glu Trp Tyr Lys Asn Gly
                165                 170                 175
Arg Val Pro Leu His Thr Leu Arg Ala Asp Ile Asp Tyr Ala Thr Ala
        180                 185                 190
Cys Ala Glu Thr Thr Tyr Gly Ile Ile Gly Ile Lys Val Trp Ile Asn
        195                 200                 205
Leu Gly Glu Asn Ser Ser Ser Thr Thr Pro Asn Asn Pro Ala Ala Pro
210                 215                 220
Ser Ala Ala Ala
225
```

<210> 644
<211> 115
<212> PRT
<213> Chlamydia pneumoniae

<400> 644

Arg Arg His Ser Met Phe Lys Ala Thr Ala Arg Tyr Ile Arg Val Gln
1   5   10   15

Pro Arg Lys Ala Arg Leu Ala Ala Gly Leu Met Arg Asn Leu Ser Val
            20   25   30

Gln Glu Ala Glu Glu Gln Leu Gly Phe Ser Gln Leu Lys Ala Gly Arg
        35   40   45

Cys Leu Lys Lys Val Leu Asn Ser Ala Val Ala Asn Ala Glu Leu His
    50   55   60

Glu Asn Ile Lys Arg Glu Asn Leu Ser Val Thr Glu Val Arg Val Asp
65   70   75   80

Ala Gly Pro Val Tyr Lys Arg Ser Lys Ser Lys Ser Arg Gly Gly Arg
            85   90   95

Ser Pro Ile Leu Lys Arg Thr Ser His Leu Thr Val Ile Val Gly Glu
            100   105   110

Lys Glu Arg
        115

<210> 645
<211> 92
<212> PRT
<213> Chlamydia pneumoniae

<400> 645

Glu Ile Arg Ile Met Gly Arg Ser Leu Arg Lys Gly Pro Phe Val Asp
1   5   10   15

His His Leu Leu Lys Lys Val Arg Ala Met Asn Ile Glu Glu Lys Lys
            20   25   30

Thr Pro Ile Lys Thr Trp Ser Arg Arg Ser Met Ile Thr Pro Glu Met
        35   40   45

Ile Gly His Thr Phe Glu Val His Asn Gly Lys Lys Phe Leu Thr Val
    50   55   60

Phe Val Ser Glu Thr Met Val Gly His Lys Leu Gly Glu Phe Ser Pro
65   70   75   80

Thr Arg Ile Phe Lys Ser His Pro Val Lys Lys Gly
            85   90

<210> 646
<211> 291
<212> PRT
<213> Chlamydia pneumoniae

<400> 646

Phe Ile Arg Glu Ile Asn Ser Met Phe Lys Lys Phe Lys Pro Val Thr
1   5   10   15

Pro Gly Thr Arg Gln Leu Val Leu Pro Ala Phe Asp Glu Leu Thr Thr
            20   25   30

Arg Gly Glu Leu Arg Gly Thr Lys Ser Lys Arg Ser Leu Arg Pro Asn
        35   40   45

Lys Lys Leu Ser Phe Phe Lys Lys Ser Ser Gly Gly Arg Asp Asn Leu
    50   55   60

Gly His Ile Ser Cys Arg His Arg Gly Gly Ala Lys Gln Leu Tyr
65   70   75   80

Arg Val Val Asp Phe Lys Arg Asn Lys Asp Gly Ile Thr Ala Lys Val
            85   90   95

Val Thr Val Glu Tyr Asp Pro Asn Arg Ser Ala Tyr Ile Ala Leu Leu
            100   105   110

Ser Tyr Glu Asp Gly Glu Lys Arg Tyr Ile Leu Ala Pro Lys Gly Ile
        115   120   125

Gln Arg Gly Asp Val Val Val Ser Gly Glu Gly Ser Pro Phe Lys Pro
    130   135   140

```
Gly Cys Cys Met Thr Leu Lys Ser Ile Pro Leu Gly Leu Ser Val His
145                 150                 155                 160
Asn Ile Glu Met Arg Pro Ser Ser Gly Gly Lys Leu Val Arg Ser Ala
                165                 170                 175
Gly Leu Ala Ala Gln Val Ile Ala Lys Ser Pro Gly Tyr Val Thr Leu
                180                 185                 190
Lys Met Pro Ser Gly Glu Phe Arg Met Leu Asn Glu Gly Cys Arg Ala
            195                 200                 205
Thr Ile Gly Glu Val Ser Asn Ala Asp His Asn Leu Arg Val Asp Gly
        210                 215                 220
Lys Ala Gly Arg Arg Arg Trp Met Gly Val Arg Pro Thr Val Arg Gly
225                 230                 235                 240
Thr Ala Met Asn Pro Val Asp His Pro His Gly Gly Gly Glu Gly Arg
                245                 250                 255
His Asn Gly Tyr Ile Pro Arg Thr Pro Trp Gly Lys Val Thr Lys Gly
                260                 265                 270
Leu Lys Thr Arg Asp Lys Asn Lys Ser Asn Lys Trp Ile Val Lys Asp
            275                 280                 285
Arg Arg Lys
290
```

<210> 647
<211> 112
<212> PRT
<213> Chlamydia pneumoniae

```
<400> 647
Asp Met Lys Asp Pro Tyr Asp Val Ile Lys Arg His Tyr Val Thr Glu
1                 5                   10                  15
Lys Ala Lys Met Leu Glu His Leu Ser Ala Gly Thr Gly Glu Gly Lys
            20                  25                  30
Lys Lys Gly Ser Phe Cys Lys Asp Pro Lys Phe Val Phe Ile Val Ser
        35                  40                  45
His Asp Ala Thr Lys Pro Leu Ile Ala Gln Ala Leu Glu Ala Ile Tyr
    50                  55                  60
Val Asp Lys Asn Val Lys Val Lys Ser Val Asn Thr Ile Asn Val Lys
65                  70                  75                  80
Pro Gln Pro Ala Arg Met Phe Arg Gly Arg Arg Lys Gly Lys Thr Ser
                85                  90                  95
Gly Phe Lys Lys Ala Ile Val Thr Phe Tyr Gln Gly His Ser Val Gly
            100                 105                 110
```

<210> 648
<211> 229
<212> PRT
<213> Chlamydia pneumoniae

```
<400> 648
Tyr Arg Glu Asp Leu Met Val Leu Leu Ser Lys Phe Asp Phe Ser Gly
1                 5                   10                  15
Asn Lys Ile Gly Glu Val Glu Val Ala Asp Ser Leu Phe Ala Asp Glu
            20                  25                  30
Gly Asp Gly Leu Gln Leu Ile Lys Asp Tyr Ile Val Ala Ile Arg Ala
        35                  40                  45
Asn Lys Arg Gln Trp Ser Ala Cys Thr Arg Asn Arg Ser Glu Val Ser
    50                  55                  60
His Ser Thr Lys Lys Pro Phe Lys Gln Lys Gly Thr Gly Asn Ala Arg
65                  70                  75                  80
Gln Gly Cys Leu Ala Ser Pro Gln Phe Arg Gly Gly Gly Ile Val Phe
                85                  90                  95
```

886

Gly Pro Lys Pro Lys Phe Asn Gln His Val Arg Ile Asn Arg Lys Glu
        100   105   110
Arg Lys Ala Ala Ile Arg Leu Leu Leu Ala Gln Lys Ile Gln Thr Asn
        115   120   125
Lys Leu Thr Val Val Asp Asp Thr Val Phe Val Asp Ala Leu Thr Ala
        130   135   140
Pro Lys Thr Gln Ser Ala Leu Arg Phe Leu Lys Asp Cys Asn Val Glu
145   150   155   160
Cys Arg Ser Ile Leu Phe Ile Asp His Leu Asp His Val Glu Lys Asn
                165   170   175
Glu Asn Leu Arg Leu Ser Leu Arg Asn Leu Thr Ala Val Lys Gly Phe
            180   185   190
Val Tyr Gly Ile Asn Ile Asn Gly Tyr Asp Leu Ala Ser Ala His Asn
        195   200   205
Ile Val Ile Ser Lys Lys Ala Leu Gln Glu Leu Val Glu Arg Leu Val
210   215   220
Ser Glu Thr Lys Asp
225

        <210> 649
        <211> 278
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 649
Tyr Leu Glu Tyr Phe Ser Tyr Cys Lys Asn Leu Pro Pro Leu Ile Thr
1   5   10   15
Cys Pro Phe Ile Phe Leu Arg Glu Asn Phe Leu Phe Phe Leu Glu Asn
        20   25   30
Ser Ile Ser Lys Ile Leu Ser Arg Phe Val Ser Leu Phe Leu Gln Glu
        35   40   45
Glu Ser Lys Ser Leu Leu Leu Met Asp Lys Phe Met Arg Ser His Ile
    50   55   60
Ser Val Met Gly Lys Lys Glu Gly Met Ile His Ile Phe Asp Lys Asp
65   70   75   80
Gly Ser Leu Val Ala Cys Ser Val Ile Arg Val Glu Pro Asn Val Val
            85   90   95
Thr Gln Ile Lys Thr Lys Glu Ser Asp Gly Tyr Phe Ser Leu Gln Ile
        100   105   110
Gly Ala Glu Glu Met Asn Ala Pro Ala His Thr Ile Thr Lys Arg Val
        115   120   125
Ser Lys Pro Lys Leu Gly His Leu Arg Lys Ala Gly Gly Arg Val Phe
130   135   140
Arg Phe Leu Lys Glu Val Arg Gly Ser Glu Glu Ala Leu Asn Gly Val
145   150   155   160
Ser Leu Gly Asp Ala Phe Gly Leu Glu Val Phe Glu Asp Val Ser Ser
            165   170   175
Val Asp Val Arg Gly Ile Ser Lys Gly Lys Gly Phe Gln Gly Val Met
            180   185   190
Lys Lys Phe Gly Phe Arg Gly Gly Pro Gly Ser His Gly Ser Gly Phe
        195   200   205
His Arg His Ala Gly Ser Ile Gly Met Arg Ser Thr Pro Gly Arg Cys
210   215   220
Phe Pro Gly Ser Lys Arg Pro Ser His Met Gly Ala Glu Asn Val Thr
225   230   235   240
Val Lys Asn Leu Glu Val Ile Lys Val Asp Leu Glu Lys Lys Val Leu
            245   250   255
Leu Val Lys Gly Ala Ile Pro Gly Ala Arg Gly Ser Ile Val Ile Val
            260   265   270
Lys His Ser Ser Arg Thr
275

887

<210> 650
<211> 344
<212> PRT
<213> Chlamydia pneumoniae

<400> 650

```
Phe Phe Phe Lys Lys Pro Cys Lys Glu Val Lys Met Ala Thr Asn Ala
1            5                   10              15
Ile Arg Ser Ala Gly Ser Ala Ala Ser Lys Met Leu Leu Pro Val Ala
            20                  25                  30
Lys Glu Pro Ala Ala Val Ser Ser Phe Ala Gln Lys Gly Ile Tyr Cys
        35                  40                  45
Ile Gln Gln Phe Phe Thr Asn Pro Gly Asn Lys Leu Ala Lys Phe Val
    50                  55                  60
Gly Ala Thr Lys Ser Leu Asp Lys Cys Phe Lys Leu Ser Lys Ala Val
65                  70                  75                  80
Ser Asp Cys Val Val Gly Ser Leu Glu Glu Ala Gly Cys Thr Gly Asp
                85                  90                  95
Ala Leu Thr Ser Ala Arg Asn Ala Gln Gly Met Leu Lys Thr Thr Arg
            100                 105                 110
Glu Val Val Ala Leu Ala Asn Val Leu Asn Gly Ala Val Pro Ser Ile
            115                 120                 125
Val Asn Ser Thr Gln Arg Cys Tyr Gln Tyr Thr Arg Gln Ala Phe Glu
    130                 135                 140
Leu Gly Ser Lys Thr Lys Glu Arg Lys Thr Pro Gly Glu Tyr Ser Lys
145                 150                 155                 160
Met Leu Leu Thr Arg Gly Asp Tyr Leu Leu Ala Ala Ser Arg Glu Ala
                165                 170                 175
Cys Thr Ala Val Gly Ala Thr Thr Tyr Ser Ala Thr Phe Gly Val Leu
            180                 185                 190
Arg Pro Leu Met Leu Ile Asn Lys Leu Thr Ala Lys Pro Phe Leu Asp
            195                 200                 205
Lys Ala Thr Val Gly Asn Phe Gly Thr Ala Val Ala Gly Ile Met Thr
    210                 215                 220
Ile Asn His Met Ala Gly Val Ala Gly Ala Val Gly Gly Ile Ala Leu
225                 230                 235                 240
Glu Gln Lys Leu Phe Lys Arg Ala Lys Glu Ser Leu Tyr Asn Glu Arg
                245                 250                 255
Cys Ala Leu Glu Asn Gln Gln Ser Gln Leu Ser Gly Asp Val Ile Leu
            260                 265                 270
Ser Ala Glu Arg Ala Leu Arg Lys Glu His Val Ala Thr Leu Lys Arg
    275                 280                 285
Asn Val Leu Thr Leu Leu Glu Lys Ala Leu Glu Leu Val Val Asp Gly
    290                 295                 300
Val Lys Leu Ile Pro Leu Pro Ile Thr Val Ala Cys Ser Ala Ala Ile
305                 310                 315                 320
Ser Gly Ala Leu Thr Ala Ala Ser Ala Gly Ile Gly Leu Tyr Ser Ile
                325                 330                 335
Trp Gln Lys Thr Lys Ser Gly Lys
                340
```

<210> 651
<211> 321
<212> PRT
<213> Chlamydia pneumoniae

<400> 651

```
Leu Asn Leu Lys Val Val Tyr Phe Gly Thr Pro Thr Phe Ala Ala Thr
1            5                   10              15
Val Leu Gln Asp Leu Leu His His Lys Ile Gln Ile Thr Ala Val Val
            20                  25                  30
```

Thr Arg Val Asp Lys Pro Gln Lys Arg Ser Ala Gln Leu Ile Pro Ser
         35   40   45
Pro Val Lys Thr Ile Ala Leu Thr His Gly Leu Pro Leu Leu Gln Pro
     50   55   60
Ser Lys Ala Ser Asp Pro Gln Phe Ile Glu Glu Leu Arg Ala Phe Asn
65   70   75   80
Ala Asp Val Phe Ile Val Val Ala Tyr Gly Ala Ile Leu Arg Gln Ile
              85   90   95
Val Leu Asp Ile Pro Arg Tyr Gly Cys Tyr Asn Leu His Ala Gly Leu
              100   105   110
Leu Pro Ala Tyr Arg Gly Ala Ala Pro Ile Gln Arg Cys Ile Met Glu
         115   120   125
Gly Ala Thr Glu Ser Gly Asn Thr Val Ile Arg Met Asp Ala Gly Met
     130   135   140
Asp Thr Gly Asp Met Ala Asn Ile Thr Arg Val Pro Ile Gly Pro Asp
145   150   155   160
Met Thr Ser Gly Glu Leu Ala Asp Ala Leu Ala Ser Gln Gly Ala Glu
              165   170   175
Val Leu Ile Lys Thr Leu Gln Gln Ile Glu Ser Gly Gln Leu Gln Leu
              180   185   190
Val Ser Gln Asp Ala Ala Leu Ala Thr Ile Ala Pro Lys Leu Ser Lys
         195   200   205
Glu Glu Gly Gln Val Pro Trp Asp Lys Pro Ala Lys Glu Ala Tyr Ala
     210   215   220
His Ile Arg Gly Val Thr Pro Ala Pro Gly Ala Trp Thr Leu Phe Ser
225   230   235   240
Phe Ser Glu Lys Ala Pro Lys Arg Leu Met Ile Arg Lys Ala Ser Leu
              245   250   255
Leu Ala Glu Ala Gly Arg Tyr Gly Ala Pro Gly Thr Val Val Val Thr
              260   265   270
Asp Arg Gln Glu Leu Ala Ile Ala Cys Ser Glu Gly Ala Ile Cys Leu
         275   280   285
His Glu Val Gln Val Glu Gly Lys Gly Ser Thr Asn Ser Lys Ser Phe
290   295   300
Leu Asn Gly Tyr Pro Ala Lys Lys Leu Lys Ile Val Phe Thr Leu Asn
305   310   315   320
Asn

    <210> 652
    <211> 283
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 652
Ser Arg Arg Asn Met Ala Ser Ile His Pro Thr Ala Ile Ile Glu Pro
1   5   10   15
Gly Ala Lys Ile Gly Lys Asp Val Val Ile Glu Pro Tyr Val Val Ile
         20   25   30
Lys Ala Thr Val Thr Leu Cys Asp Asn Val Val Val Lys Ser Tyr Ala
         35   40   45
Tyr Ile Asp Gly Asn Thr Thr Ile Gly Lys Gly Thr Thr Ile Trp Pro
     50   55   60
Ser Ala Met Ile Gly Asn Lys Pro Gln Asp Leu Lys Tyr Gln Gly Glu
65   70   75   80
Lys Thr Tyr Val Thr Ile Gly Glu Asn Cys Glu Ile Arg Glu Phe Ala
              85   90   95
Ile Ile Thr Ser Ser Thr Phe Glu Gly Thr Thr Val Ser Ile Gly Asn
              100   105   110
Asn Cys Leu Ile Met Pro Trp Ala His Val Ala His Asn Cys Thr Ile
         115   120   125

Gly Asn Asn Val Val Leu Ser Asn His Ala Gln Leu Ala Gly His Val
130   135   140
Gln Val Gly Asp Tyr Ala Ile Leu Gly Gly Met Val Gly Val His Gln
145   150   155   160
Phe Val Arg Ile Gly Ala His Ala Met Val Gly Ala Leu Ser Gly Ile
                165   170   175
Arg Arg Asp Val Pro Pro Tyr Thr Ile Gly Ser Gly Asn Pro Tyr Gln
            180   185   190
Leu Ala Gly Ile Asn Lys Val Gly Leu Gln Arg Arg Gln Val Pro Phe
        195   200   205
Ala Thr Arg Leu Ala Leu Ile Lys Ala Phe Lys Lys Ile Tyr Arg Ala
        210   215   220
Asp Gly Cys Phe Phe Glu Ser Leu Glu Glu Thr Leu Glu Glu Tyr Gly
225   230   235   240
Asp Ile Pro Glu Val Lys Asn Phe Ile Glu Phe Cys Gln Ser Pro Ser
                245   250   255
Lys Arg Gly Ile Glu Arg Ser Ile Asp Lys Gln Ala Leu Glu Glu Glu
                260   265   270
Ser Ala Asp Lys Glu Gly Val Leu Ile Glu Ser
        275   280

        <210> 653
        <211> 153
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 653
Met Asn Gln Pro Ser Val Ile Lys Leu Arg Glu Leu Leu Asp Leu Leu
1   5   10   15
Pro His Arg Tyr Pro Phe Leu Leu Val Asp Lys Val Leu Ser Tyr Asp
            20   25   30
Ile Glu Ala Arg Ser Ile Thr Ala Gln Lys Asn Val Thr Ile Asn Glu
        35   40   45
Pro Phe Phe Met Gly His Phe Pro Asn Ala Pro Ile Met Pro Gly Val
        50   55   60
Leu Ile Leu Glu Ala Leu Ala Gln Ala Ala Gly Val Leu Ile Gly Leu
65   70   75   80
Val Leu Glu Asn Asp Arg Asn Lys Arg Ile Ala Leu Phe Leu Gly Ile
                85   90   95
Gln Lys Ala Lys Phe Arg Gln Ala Val Arg Pro Gly Asp Val Leu Thr
            100   105   110
Leu Gln Ala Asp Phe Ser Leu Ile Ser Ser Lys Gly Gly Lys Ala Trp
        115   120   125
Ala Gln Ala Arg Val Asp Ser Gln Leu Val Thr Glu Ala Glu Leu Ser
        130   135   140
Phe Ala Leu Val Asp Lys Glu Ser Ile
145   150

        <210> 654
        <211> 297
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 654
Lys Arg Asn Ser Ile Ile Tyr Gly Asp Ser Leu Ser Gly Phe Tyr Met
1   5   10   15
Leu Glu Arg Thr Gln Arg Thr Leu Lys Arg Glu Val Arg Tyr Ser Gly
            20   25   30
Val Gly Ile His Leu Gly Lys Ser Ser Thr Leu His Leu Gln Pro Ala
        35   40   45

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Gln Thr Asn Thr Gly Ile Val Phe Gln Arg Gln Ser Ala Ser Gly Asn
　　50　　　　　　　　　　55　　　　　　　　　60
Tyr Glu Asn Val Pro Ala Leu Leu Asp His Val Tyr Thr Thr Gly Arg
65　　　　　　　　　　　70　　　　　　　75　　　　　　　　　80
Ser Thr Thr Leu Ser Arg Gly Ser Ala Val Ile Ala Thr Val Glu His
　　　　　　　　　85　　　　　　　　　90　　　　　　　　95
Leu Met Ala Ala Leu Arg Ser Asn Asn Ile Asp Asn Leu Ile Ile Gln
　　　　　　　100　　　　　　　　105　　　　　　　110
Cys Ser Gly Glu Glu Ile Pro Ile Gly Asp Gly Ser Ser Asn Val Phe
　　　　　115　　　　　　　　120　　　　　　　125
Val Glu Leu Ile Asp Gln Ala Gly Ile Cys Glu Gln Glu Asp Lys Val
　　　130　　　　　　　　135　　　　　　　140
Ser Ile Ala Arg Leu Thr Arg Pro Val Tyr Tyr Gln His Gln Asp Ile
145　　　　　　　　　150　　　　　　　155　　　　　　　　160
Phe Leu Ala Ala Phe Pro Ser Asp Glu Leu Lys Ile Ser Tyr Thr Leu
　　　　　　　165　　　　　　　　170　　　　　　　175
His Tyr Pro Gln Ser Ser Thr Ile Gly Thr Gln Tyr Lys Ser Leu Val
　　　　　　180　　　　　　　　185　　　　　　　190
Ile Asn Glu Glu Ser Phe Arg Gln Glu Ile Ala Pro Cys Arg Thr Phe
　　　　　195　　　　　　　　200　　　　　　　205
Ala Leu Tyr Asn Glu Leu Cys Phe Leu Met Glu Lys Gly Leu Ile Gly
　　　210　　　　　　　　215　　　　　　　220
Gly Gly Cys Leu Asp Asn Ala Val Val Phe Lys Asp Asp Gly Ile Ile
225　　　　　　　　　230　　　　　　　235　　　　　　　　240
Ser Arg Gly Gln Leu Arg Phe Ala Asp Glu Pro Val Arg His Lys Ile
　　　　　　　245　　　　　　　　250　　　　　　　255
Leu Asp Leu Ile Gly Asp Leu Ser Leu Val Gly Arg Pro Phe Val Ala
　　　　　　260　　　　　　　　265　　　　　　　270
His Val Leu Ala Val Gly Ser Gly His Ser Ser Asn Ile Ala Phe Gly
　　　　　275　　　　　　　　280　　　　　　　285
Lys Lys Ile Leu Glu Ala Leu Glu Leu
　　　290　　　　　　　　295

　　　　　<210>　655
　　　　　<211>　544
　　　　　<212>　PRT
　　　　　<213>　Chlamydia pneumoniae

　　　　　<400>　655
Gly Glu Pro Val Leu Arg Ile Phe Cys Phe Val Ile Ser Trp Cys Leu
1　　　　　　　　5　　　　　　　　10　　　　　　　　15
Ile Ala Phe Ala Gln Pro Asp Leu Ser Gly Phe Val Ser Ile Leu Gly
　　　　　　　20　　　　　　　　25　　　　　　　30
Ala Ala Cys Gly Tyr Gly Phe Phe Trp Tyr Ser Leu Glu Pro Leu Lys
　　　35　　　　　　　　40　　　　　　　　45
Lys Pro Ser Leu Pro Leu Arg Thr Leu Phe Val Ser Cys Phe Phe Trp
　　　50　　　　　　　　55　　　　　　　　60
Ile Phe Thr Ile Glu Gly Ile His Phe Ser Trp Met Leu Ser Asp Gln
65　　　　　　　　　70　　　　　　　75　　　　　　　　80
Tyr Ile Gly Lys Leu Ile Tyr Leu Val Trp Leu Thr Leu Ile Thr Ile
　　　　　　　85　　　　　　　90　　　　　　　95
Leu Ser Val Leu Phe Ser Gly Phe Ser Cys Leu Leu Val Ala Ile Val
　　　　　　　100　　　　　　　　105　　　　　　　110
Arg Gln Lys Arg Thr Ala Phe Leu Trp Ser Leu Pro Gly Val Trp Val
　　　115　　　　　　　　120　　　　　　　125
Ala Ile Glu Met Leu Arg Phe Tyr Gly Ile Phe Ser Gly Met Ser Phe
　　　130　　　　　　　　135　　　　　　　140
Asp Tyr Leu Gly Trp Pro Met Thr Ala Ser Ala Tyr Gly Arg Gln Phe
145　　　　　　　　　150　　　　　　　155　　　　　　　　160
Gly Gly Phe Leu Gly Trp Ala Gly Gln Ser Phe Ala Val Ile Ala Val
　　　　　　　165　　　　　　　　170　　　　　　　175

```
Asn Met Ser Phe Tyr Cys Leu Leu Leu Lys Lys Pro His Ala Lys Met
        180                 185                 190
Leu Trp Val Leu Thr Leu Leu Leu Pro Tyr Thr Phe Gly Ala Ile His
        195                 200                 205
Tyr Glu Tyr Leu Lys His Ala Phe Gln Gln Asp Lys Arg Ala Leu Arg
        210             215                 220
Val Ala Val Val Gln Pro Ala His Pro Pro Ile Arg Pro Lys Leu Lys
225                 230                 235                 240
Ser Pro Ile Val Val Trp Glu Gln Leu Leu Gln Leu Val Ser Pro Ile
                245                 250                 255
Gln Gln Pro Ile Asp Leu Leu Ile Phe Pro Glu Val Val Val Pro Phe
                260                 265                 270
Gly Lys His Arg Gln Val Tyr Pro Tyr Glu Ser Cys Ala His Leu Leu
        275                 280                 285
Ser Ser Phe Ala Pro Leu Pro Glu Gly Lys Ala Phe Leu Ser Asn Ser
    290                 295                 300
Asp Cys Ala Thr Ala Leu Ser Gln His Phe Gln Cys Pro Val Ile Ile
305                 310                 315                 320
Gly Leu Glu Arg Trp Val Lys Lys Glu Asn Val Leu Tyr Trp Tyr Asn
                325                 330                 335
Ser Ala Glu Val Ile Ser His Lys Gly Ile Ser Val Gly Tyr Asp Lys
        340                 345                 350
Arg Ile Leu Val Pro Gly Gly Glu Tyr Ile Pro Gly Gly Lys Phe Gly
        355                 360                 365
Ser Leu Ile Cys Arg Gln Leu Phe Pro Lys Tyr Ala Leu Gly Cys Lys
    370                 375                 380
Arg Leu Pro Gly Arg Arg Ser Gly Val Val Gln Val Arg Gly Leu Pro
385                 390                 395                 400
Arg Ile Gly Ile Thr Ile Cys Tyr Glu Glu Thr Phe Gly Tyr Arg Leu
                405                 410                 415
Gln Ser Tyr Lys Arg Gln Gly Ala Glu Leu Leu Val Asn Leu Thr Asn
        420                 425                 430
Asp Gly Trp Tyr Pro Glu Ser Arg Leu Pro Lys Val His Phe Leu His
        435                 440                 445
Gly Met Leu Arg Asn Gln Glu Phe Gly Met Pro Cys Val Arg Ala Cys
    450                 455                 460
Gln Thr Gly Val Thr Ala Ala Val Asp Ser Leu Gly Arg Ile Leu Lys
465                 470                 475                 480
Ile Leu Pro Tyr Asp Thr Arg Glu Thr Lys Ala Pro Ser Gly Val Leu
                485                 490                 495
Glu Thr Ser Leu Pro Leu Phe Asn Tyr Lys Thr Leu Tyr Gly Tyr Cys
        500                 505                 510
Gly Asp Tyr Pro Met Ile Leu Ile Ala Phe Cys Ala Val Ser Tyr Leu
    515                 520                 525
Gly Gly Gly Phe Leu Gly Tyr Arg Leu Leu Ala Lys Lys Glu Ile Arg
    530                 535                 540
```

```
        <210> 656
        <211> 183
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 656
Lys Lys Ile Ile Asp Phe Leu Ser Val Asp Arg Tyr Tyr Arg Asn Gln
1               5                   10                  15
Glu Tyr Pro Ile Lys Ile Leu Ser Val Glu Ser Thr Met Leu Lys Lys
            20                  25                  30
Lys Pro Val Ser Phe Ser Cys Ile Asp Gly His Ile Tyr Lys Ile Phe
            35                  40                  45
Pro Asn Asp Leu Asn Ala Asn Asn Thr Val Phe Gly Gly Leu Leu Met
    50                  55                  60
```

```
Ser Leu Leu Asp Arg Leu Ala Leu Val Val Ala Glu Arg His Thr Glu
65              70              75                      80
Ser Val Cys Val Thr Ala Phe Val Asp Ala Leu Arg Phe Tyr Ala Pro
                85              90                      95
Ala Tyr Met Gly Glu Asn Leu Ile Cys Lys Ala Ala Val Asn Arg Thr
            100             105             110
Trp Arg Thr Ser Leu Glu Val Gly Val Lys Val Trp Ala Glu Asn Ile
        115             120             125
Tyr Lys Gln Glu Arg Arg His Ile Thr Ser Ala Tyr Phe Thr Phe Val
    130             135             140
Ala Val Asn Glu Asp Asn Gln Pro Ile Pro Val His Gln Ile Val Pro
145             150             155             160
Glu Thr Pro Glu Glu Lys Arg Arg Tyr Asn Glu Ala Asp Arg Arg Arg
                165             170             175
Gln Ala Arg Leu Glu Leu Lys
                180
```

        <210> 657
        <211> 252
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 657
```
Lys Glu Ile Met Ser Leu Leu Lys Asp Thr Val Phe Thr Cys Leu Asp
  1              5              10                      15
Cys Glu Met Thr Gly Leu Asp Val Lys Lys Asp Arg Ile Ile Glu Ile
                20              25              30
Ala Ala Val Arg Phe Thr Phe Asp Ser Val Ile Ser Ser Ile Glu Phe
            35              40              45
Leu Ile Asn Pro Glu Arg Val Val Ser Ala Glu Ser Gln Arg Val His
    50              55              60
His Ile Ser Asn Ala Met Leu Arg Asp Gln Pro Lys Ile Ala Glu Val
65              70              75                      80
Phe Pro Gln Ile Lys Ala Phe Phe Lys Glu Gly Asp Tyr Ile Val Gly
                85              90                      95
His Ser Val Gly Phe Asp Leu Gln Val Leu Ala Gln Glu Met Glu Arg
            100             105             110
Ile Gly Glu Thr Phe Leu Ser Lys Tyr Thr Ile Ile Asp Thr Leu Arg
            115             120             125
Leu Ala Lys Glu Tyr Gly Asp Ser Pro Asn Asn Ser Leu Glu Ser Leu
    130             135             140
Ala Val His Phe Asn Val Pro Tyr Asp Gly Asn His Arg Ala Met Lys
145             150             155             160
Asp Val Glu Ile Asn Ile Asn Ile Phe Lys His Leu Cys Lys Arg Phe
                165             170             175
Arg Thr Leu Glu Gln Leu Lys Gln Val Leu Ala Lys Pro Ile Lys Met
        180             185             190
Lys Tyr Met Pro Leu Gly Lys His Lys Gly Arg Cys Phe Ser Glu Ile
        195             200             205
Pro Leu Ala Tyr Leu Gln Trp Ala Ser Lys Met Asp Phe Asp Ser Asp
    210             215             220
Leu Leu Phe Ser Ile Arg His Glu Ile Lys His Arg Gln Lys Gly Thr
225             230             235             240
Gly Phe Ser Gln Val Asn Asn Pro Phe Met Glu Leu
                245             250
```

        <210> 658
        <211> 69
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 658

Thr His Asn Phe Leu Leu Leu Pro Leu Ser Leu Phe Asp Ile Leu Leu
1   5   10   15
Thr Val Glu Gly Phe Leu Cys Leu Thr Leu Tyr Phe Ala Ser Val Gln
                20   25   30
Arg Met Pro Cys Glu Gln Lys Arg Val Pro Gly Asn Leu Tyr Tyr Tyr
            35   40   45
Tyr Ile Ala Ala His Ser Ser Leu Cys Leu Ser Val Cys Lys Asp Thr
    50   55   60
Met Glu Asn Lys Asp
65

        <210> 659
        <211> 142
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 659

Pro Met Gly Arg Tyr Arg Arg Val Ser His Ser Ser Gln Glu Thr Leu
1   5   10   15
Leu Leu Gly Thr Glu Leu Gly Gln Val Leu Val Pro Gly Ala Val Leu
                20   25   30
Leu Leu Phe Gly Asp Tyr Gly Ala Gly Lys Thr Glu Phe Val Arg Gly
            35   40   45
Ile Val Ser Gly Tyr Leu Gly Asp Thr Ile Ala Glu Glu Val Ala Ser
    50   55   60
Pro Ser Phe Ser Ile Leu His Val Tyr Gly Asn Glu Pro Lys Arg Leu
65   70   75   80
Cys His Tyr Asp Leu Tyr Arg Ile Asp Gln Lys Asn Gln Glu Tyr Ile
            85   90   95
Phe Gln Asp Ala Glu Glu Asp Asp Val Leu Cys Ile Glu Trp Ala Asp
            100   105   110
Arg Leu Pro Lys Pro Arg Phe Cys Asp Thr Ile Asn Ile Tyr Ile Thr
        115   120   125
Met Gln Thr Asn Met Glu Arg Glu Ile Ile Ile Glu Lys Arg
    130   135   140

        <210> 660
        <211> 242
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 660

Lys Arg Val Gly Met Asp Ile Ser Gly Ala Val Lys Gln Lys Leu Leu
1   5   10   15
Gln Phe Leu Gly Lys Gln Lys Lys Pro Glu Leu Leu Ala Thr Tyr Leu
                20   25   30
Phe Tyr Leu Glu Gln Ala Leu Ser Leu Arg Pro Val Val Phe Val Arg
        35   40   45
Asp Lys Ile Ile Phe Lys Thr Pro Glu Asp Ala Val Arg Ile Leu Glu
    50   55   60
Gln Asp Lys Lys Ile Trp Arg Glu Thr Glu Ile Gln Ile Ser Ser Glu
65   70   75   80
Lys Pro Gln Val Asn Glu Asn Thr Lys Arg Ile Tyr Ile Cys Pro Phe
                85   90   95
Thr Gly Lys Val Phe Ala Asp Asn Val Tyr Ala Asn Pro Gln Asp Ala
            100   105   110
Ile Tyr Asp Trp Leu Ser Ser Cys Pro Gln Asn Met Glu Lys Gln Gly
        115   120   125
Gly Val Arg Ile Lys Arg Phe Leu Val Ser Glu Asp Pro Asp Val Ile
        130   135   140

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```
Lys Glu Tyr Ala Val Pro Pro Lys Glu Pro Ile Ile Lys Thr Val Phe
145             150             155             160
Ala Ser Ala Ile Thr Gly Lys Leu Phe His Ser Leu Pro Pro Leu Leu
                165             170             175
Glu Asp Phe Ile Ser Ser Tyr Leu Arg Pro Met Thr Leu Glu Glu Val
                180             185             190
Gln Asn Gln Thr Lys Phe Gln Leu Glu Ser Ser Phe Leu Ser Leu Leu
            195             200             205
Gln Asp Ala Leu Val Glu Asp Lys Ile Ala Ala Phe Ile Glu Ser Leu
        210             215             220
Ala Asp Asp Thr Ala Phe His Val Tyr Ile Ser Gln Trp Val Asp Thr
225             230             235             240
Glu Glu


        <210> 661
        <211> 120
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 661
Leu Gln Glu Asn Asn Arg Asp Ser Asn Ser Ile Phe Phe Arg Glu Gly
1               5               10              15
Lys Leu Met Val Lys Ile Ile Ser Ser Glu Asn Phe Asp Ser Phe Ile
            20              25              30
Ala Ser Gly Leu Val Leu Val Asp Phe Phe Ala Glu Trp Cys Gly Pro
        35              40              45
Cys Arg Met Leu Thr Pro Ile Leu Glu Asn Leu Ala Ala Glu Leu Pro
    50              55              60
His Val Thr Ile Gly Lys Ile Asn Ile Asp Glu Asn Ser Lys Pro Ala
65              70              75              80
Glu Thr Tyr Glu Val Ser Ser Ile Pro Thr Leu Ile Leu Phe Lys Asp
            85              90              95
Gly Asn Glu Val Ala Arg Val Val Gly Leu Lys Asp Lys Glu Phe Leu
            100             105             110
Thr Asn Leu Ile Asn Lys His Ala
        115             120


        <210> 662
        <211> 156
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 662
Met Arg Val Val Leu His Cys Pro Asp Ile Pro Gln Asn Thr Gly Asn
1               5               10              15
Ile Gly Arg Thr Cys Val Ala Leu Gly Ala Glu Leu Ile Leu Val Arg
            20              25              30
Pro Leu Gly Phe Ser Leu Ala Asp Lys Phe Val Lys Arg Ala Gly Met
        35              40              45
Asp Tyr Trp Asp Lys Leu Gln Leu Thr Val Val Asp Ser Ile Glu Glu
    50              55              60
Ala Leu His Asp Val Pro Glu Asp Gln Ile Phe Cys Leu Ser Thr Lys
65              70              75              80
Gly Ser Ala Ser Tyr Thr Glu Phe Ser Leu Pro Ser Ser Gly Thr Tyr
            85              90              95
Val Phe Gly Ser Glu Ser Lys Gly Leu Pro Lys Glu Ile Leu Lys Lys
            100             105             110
Tyr Tyr Lys Asn Cys Leu Arg Ile Pro Met Gln Gln Asp Ile Arg Ser
        115             120             125
```

Leu Asn Leu Ala Thr Ser Val Gly Ile Val Leu Tyr Glu Val Val Arg
130   135   140
Gln Lys Thr Val Ala Leu Gln Lys Asn Pro Thr Val
145   150   155

<210> 663
<211> 271
<212> PRT
<213> Chlamydia pneumoniae

<400> 663
His Ser Arg Cys Leu Lys Ile Lys Asp Arg Arg Arg Lys Met Asn Arg
1   5   10   15
Arg Trp Asn Leu Val Leu Ala Thr Val Ala Leu Ala Leu Ser Val Ala
            20   25   30
Ser Cys Asp Val Arg Ser Lys Asp Lys Asp Lys Asp Gln Gly Ser Leu
        35   40   45
Val Glu Tyr Lys Asp Asn Lys Asp Thr Asn Asp Ile Glu Leu Ser Asp
        50   55   60
Asn Gln Lys Leu Ser Arg Thr Phe Gly His Leu Leu Ala Arg Gln Leu
65   70   75   80
Arg Lys Ser Glu Asp Met Phe Phe Asp Ile Ala Glu Val Ala Lys Gly
            85   90   95
Leu Gln Ala Glu Leu Val Cys Lys Ser Ala Pro Leu Thr Glu Thr Glu
            100   105   110
Tyr Glu Glu Lys Met Ala Glu Val Gln Lys Leu Val Phe Glu Lys Lys
            115   120   125
Ser Lys Glu Asn Leu Ser Leu Ala Glu Lys Phe Leu Lys Glu Asn Ser
            130   135   140
Lys Asn Ala Gly Val Val Glu Val Gln Pro Ser Lys Leu Gln Tyr Lys
145   150   155   160
Ile Ile Lys Glu Gly Ala Gly Lys Ala Ile Ser Gly Lys Pro Ser Ala
            165   170   175
Leu Leu His Tyr Lys Gly Ser Phe Ile Asn Gly Gln Val Phe Ser Ser
            180   185   190
Ser Glu Gly Asn Asn Glu Pro Ile Leu Leu Pro Leu Gly Gln Thr Ile
            195   200   205
Pro Gly Phe Ala Leu Gly Met Gln Gly Met Lys Glu Gly Glu Thr Arg
210   215   220
Val Leu Tyr Ile His Pro Asp Leu Ala Tyr Gly Thr Ala Gly Gln Leu
225   230   235   240
Pro Pro Asn Ser Leu Leu Ile Phe Glu Ile Asn Leu Ile Gln Ala Ser
            245   250   255
Ala Asp Glu Val Ala Ala Val Pro Gln Glu Gly Asn Gln Gly Glu
            260   265   270

<210> 664
<211> 589
<212> PRT
<213> Chlamydia pneumoniae

<400> 664
Ser Lys Gly Cys Tyr Met Lys Tyr Arg Thr His Arg Cys Asn Glu Leu
1   5   10   15
Thr Ser Asn His Ile Gly Glu Asn Val Gln Leu Ala Gly Trp Val His
            20   25   30
Arg Tyr Arg Asn His Gly Gly Val Val Phe Ile Asp Leu Arg Asp Arg
        35   40   45
Phe Gly Ile Thr Gln Ile Val Cys Arg Glu Asp Glu Gln Pro Glu Leu
        50   55   60

896

```
His Gln Arg Leu Asp Ala Val Arg Ser Glu Trp Val Leu Ser Val Arg
65                  70                  75                  80
Gly Lys Val Cys Pro Arg Leu Ala Gly Met Glu Asn Pro Asn Leu Ala
            85                  90                  95
Thr Gly His Ile Glu Val Glu Val Ala Ser Phe Glu Val Leu Ser Lys
            100                 105                 110
Ser Gln Asn Leu Pro Phe Ser Ile Ala Asp Asp His Ile Asn Val Asn
        115                 120                 125
Glu Glu Leu Arg Leu Glu Tyr Arg Tyr Leu Asp Met Arg Arg Gly Asp
    130                 135                 140
Ile Ile Glu Lys Leu Leu Cys Arg His Gln Val Met Leu Ala Cys Arg
145                 150                 155                 160
Asn Phe Met Asp Ala Gln Gly Phe Thr Glu Ile Val Thr Pro Val Leu
                165                 170                 175
Gly Lys Ser Thr Pro Glu Gly Ala Arg Asp Tyr Leu Val Pro Ser Arg
            180                 185                 190
Ile Tyr Pro Gly Lys Phe Tyr Ala Leu Pro Gln Ser Pro Gln Leu Phe
        195                 200                 205
Lys Gln Leu Leu Met Val Gly Gly Leu Asp Arg Tyr Phe Gln Ile Ala
    210                 215                 220
Thr Cys Phe Arg Asp Glu Asp Leu Arg Ala Asp Arg Gln Pro Glu Phe
225                 230                 235                 240
Ala Gln Ile Asp Ile Glu Met Ser Phe Gly Asp Thr Gln Asp Leu Leu
                245                 250                 255
Pro Ile Ile Glu Gln Leu Val Ala Thr Leu Phe Ala Thr Gln Gly Ile
            260                 265                 270
Glu Ile Pro Leu Pro Leu Ala Lys Met Thr Tyr Gln Glu Ala Lys Asp
        275                 280                 285
Ser Tyr Gly Thr Asp Lys Pro Asp Leu Arg Phe Asp Leu Lys Leu Lys
    290                 295                 300
Asp Cys Arg Asp Tyr Ala Lys Arg Ser Ser Phe Ser Ile Phe Leu Asp
305                 310                 315                 320
Gln Leu Ala His Gly Gly Thr Ile Lys Gly Phe Cys Val Pro Gly Gly
                325                 330                 335
Ala Thr Met Ser Arg Lys Gln Leu Asp Gly Tyr Thr Glu Phe Val Lys
            340                 345                 350
Arg Tyr Gly Ala Met Gly Leu Val Trp Ile Lys Asn Gln Glu Gly Lys
        355                 360                 365
Val Ala Ser Asn Ile Ala Lys Phe Met Asp Glu Glu Val Phe His Glu
    370                 375                 380
Leu Phe Ala Tyr Phe Asp Ala Lys Asp Gln Asp Ile Leu Leu Leu Ile
385                 390                 395                 400
Ala Ala Pro Glu Ser Val Ala Asn Gln Ser Leu Asp His Leu Arg Arg
                405                 410                 415
Leu Ile Ala Lys Glu Arg Glu Leu Tyr Ser Asp Asn Gln Tyr Asn Phe
            420                 425                 430
Val Trp Ile Thr Asp Phe Pro Leu Phe Ser Leu Glu Asp Gly Lys Ile
        435                 440                 445
Val Ala Glu His His Pro Phe Thr Ala Pro Leu Glu Glu Asp Ile Pro
    450                 455                 460
Leu Leu Glu Thr Asp Pro Leu Ala Val Arg Ser Ser Ser Tyr Asp Leu
465                 470                 475                 480
Val Leu Asn Gly Tyr Glu Ile Ala Ser Gly Ser Gln Arg Ile His Asn
                485                 490                 495
Pro Asp Leu Gln Ser Gln Ile Phe Thr Ile Leu Lys Ile Ser Pro Glu
            500                 505                 510
Ser Ile Gln Glu Lys Phe Gly Phe Phe Ile Lys Ala Leu Ser Phe Gly
        515                 520                 525
Thr Pro Pro His Leu Gly Ile Ala Leu Gly Leu Asp Arg Leu Val Met
    530                 535                 540
```

897

Val Leu Thr Ala Ala Glu Ser Ile Arg Glu Val Ile Ala Phe Pro Lys
545   550   555   560
Thr Gln Lys Ala Ser Asp Leu Met Met Asn Ala Pro Ser Glu Ile Met
                565   570   575
Ser Ser Gln Leu Lys Glu Leu Ser Ile Lys Val Ala Phe
                580   585

        <210> 665
        <211> 440
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 665
Lys Ser Asn His Phe Glu Arg Arg His His Val Thr Val Thr Leu Pro
1   5   10   15
Lys Gly Val Phe Asp Ile Phe Pro Tyr Leu Ala Asp Ala Lys Gln Leu
                20   25   30
Trp Arg His Thr Ser Leu Trp His Ser Val Glu Lys Ala Ile His Thr
                35   40   45
Val Cys Met Leu Tyr Gly Phe Cys Glu Ile Arg Thr Pro Ile Phe Glu
        50   55   60
Lys Ser Glu Val Phe Leu His Val Gly Glu Glu Ser Asp Val Val Lys
65   70   75   80
Lys Glu Val Tyr Ser Phe Leu Asp Arg Lys Gly Arg Ser Met Thr Leu
                85   90   95
Arg Pro Glu Gly Thr Ala Ala Val Val Arg Ser Phe Leu Glu His Gly
                100   105   110
Ala Ser His Arg Ser Asp Asn Lys Phe Tyr Tyr Ile Leu Pro Met Phe
                115   120   125
Arg Tyr Glu Arg Gln Gln Ala Gly Arg Tyr Arg Gln His His Gln Phe
        130   135   140
Gly Val Glu Ala Ile Gly Val Arg His Pro Leu Arg Asp Ala Glu Val
145   150   155   160
Leu Ala Leu Leu Trp Asp Phe Tyr Ser Arg Val Gly Leu Gln His Met
                165   170   175
Gln Ile Gln Leu Asn Phe Leu Gly Gly Ser Glu Thr Arg Phe Arg Tyr
                180   185   190
Asp Lys Val Leu Arg Ala Tyr Leu Lys Glu Ser Met Gly Glu Leu Ser
        195   200   205
Ala Leu Ser Gln Gln Arg Phe Ser Thr Asn Val Leu Arg Ile Leu Asp
        210   215   220
Ser Lys Glu Pro Glu Asp Gln Glu Ile Ile Arg Gln Ala Pro Pro Ile
225   230   235   240
Leu Asp Tyr Val Ser Asp Glu Asp Leu Lys Tyr Phe Asn Glu Ile Leu
                245   250   255
Asp Ala Leu Arg Val Leu Glu Ile Pro Tyr Ala Ile Asn Pro Arg Leu
        260   265   270
Val Arg Gly Leu Asp Tyr Tyr Ser Asp Leu Val Phe Glu Ala Thr Thr
        275   280   285
Thr Phe Gln Glu Val Ser Tyr Ala Leu Gly Gly Gly Gly Arg Tyr Asp
        290   295   300
Gly Leu Ile Ser Ala Phe Gly Gly Ala Ser Leu Pro Ala Cys Gly Phe
305   310   315   320
Gly Val Gly Leu Glu Arg Ala Ile Gln Thr Leu Leu Ala Gln Lys Arg
                325   330   335
Ile Glu Pro Gln Phe Pro His Lys Leu Arg Leu Ile Pro Met Glu Pro
                340   345   350
Asp Ala Asp Gln Phe Cys Leu Glu Trp Ser Gln His Leu Arg Arg Leu
        355   360   365
Gly Ile Pro Thr Glu Val Asp Trp Ser His Lys Lys Val Lys Gly Ala
370   375   380

898

Leu Lys Ala Ala Ser Thr Glu Gln Val Ser Phe Val Cys Leu Ile Gly
385   390   395   400
Glu Arg Glu Leu Ile Ser Gln Gln Leu Val Ile Lys Asn Met Ser Leu
            405   410   415
Arg Lys Glu Phe Phe Gly Thr Lys Glu Glu Val Glu Gln Arg Leu Leu
            420   425   430
Tyr Glu Ile Gln Asn Thr Pro Leu
        435   440

        <210> 666
        <211> 73
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 666
Leu Trp Glu Ala His Ala Met Lys Lys Leu Ile Ala Leu Ile Gly Ile
1   5   10   15
Phe Leu Val Pro Ile Lys Gly Asn Thr Asn Lys Glu His Asp Ala His
            20   25   30
Ala Thr Val Leu Lys Ala Ala Arg Ala Lys Tyr Asn Leu Phe Phe Val
        35   40   45
Gln Asp Val Phe Pro Val His Glu Val Ile Glu Pro Ile Ser Pro Asp
    50   55   60
Cys Leu Val His Tyr Glu Gly Trp Val
65   70

        <210> 667
        <211> 456
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 667
Lys Met Asn Val Trp Thr Lys Phe Phe Gln Pro Pro Lys His Ile Lys
1   5   10   15
Glu Ile Glu Asp Gln Glu Val Val Lys Lys Lys Tyr Lys Tyr Trp Arg
            20   25   30
Ile Arg Ile Phe Tyr Ser Met Phe Ile Gly Tyr Ile Phe Tyr Tyr Phe
        35   40   45
Thr Arg Lys Ser Phe Thr Phe Ala Met Pro Thr Leu Ile Ala Asp Leu
    50   55   60
Gly Phe Asp Lys Ala Gln Leu Gly Ile Ile Gly Ser Thr Leu Tyr Phe
65   70   75   80
Ser Tyr Gly Ile Ser Lys Phe Val Ser Gly Val Met Ser Asp Gln Ser
                85   90   95
Asn Pro Arg Tyr Phe Met Ala Ile Gly Leu Met Ile Thr Gly Leu Thr
            100   105   110
Asn Ile Phe Phe Gly Met Ser Ser Ser Ile Val Leu Phe Ala Leu Trp
        115   120   125
Trp Gly Leu Asn Gly Trp Phe Gln Gly Trp Gly Trp Pro Pro Cys Ala
    130   135   140
Arg Leu Leu Thr His Trp Tyr Ala Lys Ser Glu Arg Gly Thr Trp Trp
145   150   155   160
Ser Val Trp Ser Thr Ser His Asn Ile Gly Gly Ala Leu Ile Pro Ile
                165   170   175
Leu Thr Gly Phe Ile Ile Asp Tyr Ser Gly Trp Arg Gly Ala Met Tyr
            180   185   190
Val Pro Gly Ile Leu Cys Ile Gly Met Gly Leu Val Leu Ile Asn Arg
        195   200   205
Leu Arg Asp Thr Pro Gln Ser Leu Gly Leu Pro Pro Ile Glu Lys Tyr
    210   215   220

Lys Arg Asp Pro His His Ala His His Glu Gly Lys Ser Ala Ser Glu
225   230   235   240
Gly Thr Glu Glu Ile Glu Arg Glu Leu Ser Thr Arg Glu Ile Leu Phe
                245   250   255
Thr Tyr Val Leu Thr Asn Gln Trp Leu Trp Phe Leu Ala Ala Ala Ser
            260   265   270
Phe Phe Ile Tyr Ile Val Arg Met Ala Val Asn Asp Trp Ser Ala Leu
        275   280   285
Phe Leu Ile Glu Thr Lys His Tyr Ala Ala Val Lys Ala Asn Phe Cys
    290   295   300
Val Ser Leu Phe Glu Ile Gly Gly Leu Phe Gly Met Leu Val Ala Gly
305   310   315   320
Trp Leu Ser Asp Lys Ile Ser Lys Gly Asn Arg Gly Pro Met Asn Val
            325   330   335
Leu Phe Ser Leu Gly Leu Leu Phe Ala Ile Leu Gly Met Trp Phe Ser
            340   345   350
Arg Ser His Asn Gln Trp Trp Val Asp Gly Thr Leu Leu Phe Val Ile
            355   360   365
Gly Phe Phe Leu Tyr Gly Pro Gln Met Met Ile Gly Leu Ala Ala Ala
    370   375   380
Glu Leu Ser His Lys Lys Ala Ala Gly Thr Ala Ser Gly Phe Thr Gly
385   390   395   400
Trp Phe Ala Tyr Phe Gly Ala Thr Phe Ala Gly Tyr Pro Leu Gly Lys
                405   410   415
Val Thr Asp Val Trp Gly Trp Lys Gly Phe Phe Ile Ala Leu Leu Ala
            420   425   430
Cys Ala Ser Ile Ala Leu Leu Leu Phe Leu Pro Thr Trp Asn Ala Thr
            435   440   445
Glu Lys Asn Thr Arg Ser Lys Ala
450   455

Gly Phe Phe Leu Thr Trp Ile Pro Leu His Cys His Ser Gln Tyr Ser
1   5   10   15
Val Leu Asp Ala Met Ser Ser Ile Lys Asp Phe Val Ala Lys Gly Gln
            20   25   30
Glu Phe Gly Ile Pro Ala Leu Ala Leu Thr Asp His Gly Asn Leu Tyr
        35   40   45
Gly Ala Val Asp Phe Tyr Lys Glu Cys Thr Gln Lys Gly Ile Gln Pro
    50   55   60
Ile Ile Gly Cys Glu Cys Tyr Ile Ala Pro Gly Ser Arg Phe Asp Lys
65   70   75   80
Lys Lys Glu Lys Arg Ser Arg Ala Ala His His Leu Ile Leu Leu Cys
                85   90   95
Lys Asn Glu Gln Gly Tyr Arg Asn Leu Cys Ile Leu Thr Ser Leu Ala
            100   105   110
Phe Thr Glu Gly Phe Tyr Tyr Phe Pro Arg Ile Asp Lys Asp Leu Leu
        115   120   125
Arg Gln Tyr Ser Glu Gly Leu Ile Cys Leu Ser Gly Cys Leu Ser Ser
    130   135   140
Ser Val Ser Asp Ala Ala Leu Lys Ser Pro Glu Ala Leu Leu Leu Glu
145   150   155   160
Leu Gln Trp Phe Gln Asp Leu Phe Lys Asp Asp Tyr Phe Thr Glu Val
                165   170   175
Gln Leu His Lys Met Ser Glu Glu Ser Ile Ala Gly Phe Lys Glu Glu
            180   185   190

Trp Leu Lys Gln Glu Tyr Tyr Ser Leu Ile Glu Lys Gln Ile Lys Val
     195   200   205

Asn Thr Ala Val Leu Glu Ala Ser Lys Arg Leu Gly Ile Pro Thr Val
     210   215   220

Ala Thr Asn Asp Ile His Tyr Ile Asn Ala Asn Asp Trp Gln Ala His
225   230   235   240

Glu Ile Leu Leu Asn Val Gln Ser Gly Glu Thr Val Arg Ile Ala Lys
             245   250   255

Gln Asn Thr His Ile Pro Asn Pro Lys Arg Lys Val Tyr Arg Ser Arg
          260   265   270

Glu Tyr Tyr Phe Lys Ser Pro Ala Gln Met Ala Glu Leu Phe Lys Asp
        275   280   285

Ile Pro Glu Val Ile Ser Asn Thr Leu Glu Val Ala Lys Arg Cys Asp
     290   295   300

Phe Thr Phe Asp Phe Ser Lys Lys His Tyr Pro Ile Tyr Val Pro Glu
305   310   315   320

Ser Leu Lys Thr Leu Asn Ser Tyr Thr Glu Glu Asp Arg Tyr Gln Ala
             325   330   335

Ser Ala Val Phe Leu Lys Gln Leu Ala Glu Glu Ala Leu Pro Lys Lys
         340   345   350

Tyr Ser Ser Glu Val Leu Ala His Ile Ala Lys Lys Phe Pro His Arg
        355   360   365

Asp Pro Ile Asp Ile Val Lys Glu Arg Met Asp Met Glu Met Ala Ile
     370   375   380

Ile Ile Pro Lys Gly Met Cys Asp Tyr Leu Leu Ile Val Trp Asp Ile
385   390   395   400

Ile His Trp Ala Lys Ala Asn Gly Ile Pro Val Gly Pro Gly Arg Gly
          405   410   415

Ser Gly Ala Gly Ser Val Leu Leu Phe Leu Leu Gly Ile Thr Glu Ile
         420   425   430

Glu Pro Ile Arg Phe Asp Leu Phe Phe Glu Arg Phe Ile Asn Pro Glu
        435   440   445

Arg Leu Ser Tyr Pro Asp Ile Asp Ile Asp Ile Cys Met Ala Gly Arg
     450   455   460

Glu Arg Val Ile Asn Tyr Ala Ile Glu Arg His Gly Lys Asp Asn Val
465   470   475   480

Ala Gln Ile Ile Thr Phe Gly Thr Met Lys Ala Lys Met Ala Val Lys
             485   490   495

Asp Val Gly Arg Thr Leu Asp Met Ala Leu Ser Lys Val Asn His Ile
          500   505   510

Ala Lys His Ile Pro Asp Leu Asn Thr Thr Leu Ser Lys Ala Leu Glu
        515   520   525

Thr Asp Pro Asp Leu His Gln Leu Tyr Ile Asn Asp Ala Glu Ser Ala
     530   535   540

Gln Val Ile Asp Met Ala Leu Cys Leu Glu Gly Ser Ile Arg Asn Thr
545   550   555   560

Gly Val His Ala Ala Gly Val Ile Ile Cys Gly Asp Gln Leu Thr Asn
          565   570   575

His Ile Pro Ile Cys Ile Ser Lys Asp Ser Thr Met Ile Thr Thr Gln
        580   585   590

Tyr Ser Met Lys Pro Val Glu Ser Val Gly Met Leu Lys Val Asp Leu
        595   600   605

Leu Gly Leu Lys Thr Leu Thr Ser Ile Asn Ile Ala Met Ser Ala Ile
        610   615   620

Glu Lys Lys Thr Gly Gln Ser Leu Ala Met Ala Thr Leu Pro Leu Asp
625   630   635   640

Asp Ala Thr Thr Phe Ser Leu Leu His Gln Gly Lys Thr Met Gly Ile
          645   650   655

Phe Gln Met Glu Ser Lys Gly Met Gln Glu Leu Ala Lys Asn Leu Arg
        660   665   670

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Pro Asp Leu Phe Glu Glu Ile Ile Ala Met Gly Ala Leu Tyr Arg Pro
    675                 680                 685
Gly Pro Met Asp Met Ile Pro Ser Phe Ile Asn Arg Lys His Gly Lys
690                 695                 700
Glu Ile Ile Glu Tyr Asp His Pro Leu Met Glu Ser Ile Leu Lys Glu
705             710                 715                         720
Thr Tyr Gly Ile Met Val Tyr Gln Glu Gln Val Met Gln Ile Ala Gly
                725                 730                 735
Ala Leu Ala Ser Tyr Ser Leu Gly Glu Gly Asp Val Leu Arg Arg Ala
            740                 745                 750
Met Gly Lys Lys Asp Phe Gln Gln Met Glu Gln Glu Arg Glu Lys Phe
            755                 760                 765
Cys Lys Arg Ala Cys Asn Asn Gly Ile Asp Pro Glu Leu Ala Thr Val
    770                 775                 780
Ile Phe Asp Lys Met Glu Lys Phe Ala Ala Tyr Gly Phe Asn Lys Ser
785                 790                 795                     800
His Ala Ala Ala Tyr Gly Leu Ile Thr Tyr Thr Thr Ala Tyr Leu Lys
                805                 810                 815
Ala Asn Tyr Pro Lys Glu Trp Leu Ala Ala Leu Leu Thr Cys Asp Ser
            820                 825                 830
Asp Asp Ile Glu Lys Ile Gly Lys Leu Ile Arg Glu Ala Gln Ser Met
            835                 840                 845
Gly Ile Pro Ile Leu Pro Pro His Ile Asn Val Ser Ser Asn His Phe
    850                 855                 860
Val Ala Thr Asp Glu Gly Ile Arg Phe Ala Met Gly Ala Ile Lys Gly
865                 870                 875                     880
Ile Gly Arg Gly Leu Ile Glu Ser Ile Val Glu Glu Arg Asp His His
                885                 890                 895
Gly Pro Tyr Glu Ser Ile Arg Asp Phe Ile Gln Arg Ser Asp Leu Lys
            900                 905                 910
Lys Val Ser Lys Lys Ser Ile Glu Ser Leu Ile Asp Ala Gly Cys Phe
            915                 920                 925
Asp Cys Phe Asp Ser Asn Arg Asp Leu Leu Leu Ala Ser Val Glu Pro
    930                 935                 940
Leu Tyr Glu Ala Ile Ala Lys Asp Lys Lys Glu Ala Ala Ser Gly Val
945                 950                 955                     960
Met Thr Phe Phe Thr Leu Gly Ala Met Asp Arg Lys Asn Glu Val Pro
                965                 970                 975
Ile Cys Leu Pro Lys Asp Ile Pro Thr Arg Ser Lys Lys Glu Leu Leu
            980                 985                 990
Lys Lys Glu Lys Glu Leu Leu Gly Ile Tyr Leu Thr Glu His Pro Met
            995                 1000                1005
Asp Thr Val Arg Asp His Leu Ser Arg Leu Ser Val Val Leu Ala Gly
    1010                1015                1020
Glu Phe Glu Asn Leu Pro His Gly Ser Val Val Arg Thr Val Phe Ile
1025                1030                1035                1040
Ile Asp Lys Val Thr Thr Lys Ile Ser Ser Lys Ala Gln Lys Lys Phe
                1045                1050                1055
Ala Val Leu Arg Val Ser Asp Gly Ile Asp Ser Tyr Glu Leu Pro Ile
            1060                1065                1070
Trp Pro Asp Met Tyr Glu Glu Gln Gln Glu Leu Leu Glu Glu Asp Arg
            1075                1080                1085
Leu Ile Tyr Ala Ile Leu Val Leu Asp Lys Arg Ser Asp Ser Leu Arg
            1090                1095                1100
Ile Ser Cys Arg Trp Met Lys Asp Leu Ser Ile Val Asn Glu Asn Ile
1105                1110                1115                1120
Ile Tyr Glu Cys Asp Gln Ala Phe Asp Arg Ile Lys Asn Gln Val Gln
                1125                1130                1135
Lys Met Ser Phe Thr Met Ser Thr Ser Gly Lys Glu Thr Lys Ala Lys
            1140                1145                1150
```

902

Gly Asn Lys Pro Asn Glu Asn Gly His Thr Gln Ala Leu Ala Pro Val
        1155   1160   1165
Thr Leu Ser Leu Asp Leu Asn Glu Leu Arg His Ser His Leu Cys Ile
        1170   1175   1180
Leu Lys Lys Ile Val Gln Lys His Pro Gly Ser Arg Thr Leu Val Leu
1185   1190   1195   1200
Val Phe Thr Gln Asp Asn Glu Arg Val Ala Ser Met Ser Pro Asp Asp
            1205   1210   1215
Ala Tyr Phe Val Cys Glu Asp Ile Glu Glu Leu Arg Gln Glu Leu Val
            1220   1225   1230
Thr Ala Asp Leu Pro Val Arg Val Ile Thr Val
        1235   1240

        <210> 669
        <211> 307
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 669
Asn Ile Ser Leu Leu Cys Lys Ile Gln Lys Arg Tyr Phe Met Lys Lys
1   5   10   15
Leu Ile Leu Tyr Phe Ala Ala Phe Val Ala Ser Leu Phe Cys Gly Val
        20   25   30
Phe Leu Trp Asp Arg Val Pro Cys Ala Gln Lys Ile Met Arg Leu Ala
        35   40   45
Ala Asp His Ser Ser Glu Val Phe Ser Lys Ser Cys Arg Phe Val Arg
    50   55   60
Lys Ile Ser Gly Phe Glu Glu Leu Gln Val Phe Glu Arg His Val Ser
65   70   75   80
Pro Glu Gln Ala Leu Ala Leu Phe Pro Glu Tyr Arg Asp Gly Lys Ser
            85   90   95
Phe Val Glu Leu Ala Phe Ile Pro His Thr Leu Met His Val Arg Phe
            100   105   110
Ser Lys Glu Glu Pro Val Lys Lys His Ile Ile Ser Gln Glu Gly Glu
        115   120   125
Ile Leu Trp Ser Leu Val Asn Gly Glu Met Val Leu His Thr Gly Thr
        130   135   140
Trp Thr Cys Ser Lys Gly Phe Arg Glu Cys Leu Leu Leu His Ala Gly
145   150   155   160
Lys Gln Asp Met Arg Val Ile Gln Thr Leu Ala Thr Leu Gly Gly Thr
            165   170   175
Thr Ser Arg Glu Ser Leu Ala Gln Ala Leu Ala Leu Lys Asn Ile Arg
        180   185   190
Ala Glu Arg Val Ile Lys Glu Cys Gln Lys Lys Lys Leu Ile Phe Ala
        195   200   205
Ser Gly Asn Gln Ile Gly Thr His Phe Gln Gln Phe Gln Pro Ile Arg
        210   215   220
Gly Cys Thr Thr Thr Leu Asn Asn Asn Pro Val Trp Leu Gln Lys Pro
225   230   235   240
Arg His Ala Ala Val Phe Pro Ala Gln Tyr Ser Glu Asp Arg Val Arg
            245   250   255
His Leu Val Lys Met Ile Phe Gly Asp Asn Phe Leu Ile Val Arg Ser
        260   265   270
Ser Met Val Tyr Val Pro Val Tyr Lys Ile Ser Leu Val Ser Ala Asp
        275   280   285
Asn Ser Val Arg Val Glu Tyr Ile Asn Ala Val Thr Gly Lys Ser Phe
290   295   300
Gln Asp Leu
305

<210> 670
<211> 329
<212> PRT
<213> Chlamydia pneumoniae

<400> 670

```
Trp Arg Phe Val Val Val Ser Pro Arg Leu Ile Met Lys Phe Leu Leu
1               5                  10                  15
Tyr Val Pro Leu Leu Leu Val Leu Val Ser Thr Gly Cys Asp Ala Lys
            20                  25                  30
Pro Val Ser Phe Glu Pro Phe Ser Gly Lys Leu Ser Thr Gln Arg Phe
        35                  40                  45
Glu Pro Gln His Ser Ala Glu Glu Tyr Phe Ser Gln Gly Gln Glu Phe
    50                  55                  60
Leu Lys Lys Gly Asn Phe Arg Lys Ala Leu Leu Cys Phe Gly Ile Ile
65                  70                  75                  80
Thr His His Phe Pro Arg Asp Ile Leu Arg Asn Gln Ala Gln Tyr Leu
                85                  90                  95
Ile Gly Val Cys Tyr Phe Thr Gln Asp His Pro Asp Leu Ala Asp Lys
            100                 105                 110
Ala Phe Ala Ser Tyr Leu Gln Leu Pro Asp Ala Glu Tyr Ser Glu Glu
        115                 120                 125
Leu Phe Gln Met Lys Tyr Ala Ile Ala Gln Arg Phe Ala Gln Gly Lys
    130                 135                 140
Arg Lys Arg Ile Cys Arg Leu Glu Gly Phe Pro Lys Leu Met Asn Ala
145                 150                 155                 160
Asp Glu Asp Ala Leu Arg Ile Tyr Asp Glu Ile Leu Thr Ala Phe Pro
                165                 170                 175
Ser Lys Asp Leu Gly Ala Gln Ala Leu Tyr Ser Lys Ala Ala Leu Leu
            180                 185                 190
Ile Val Lys Asn Asp Leu Thr Glu Ala Thr Lys Thr Leu Lys Lys Leu
        195                 200                 205
Thr Leu Gln Phe Pro Leu His Ile Leu Ser Ser Glu Ala Phe Val Arg
    210                 215                 220
Leu Ser Glu Ile Tyr Leu Gln Gln Ala Lys Lys Glu Pro His Asn Leu
225                 230                 235                 240
Gln Tyr Leu His Phe Ala Lys Leu Asn Glu Glu Ala Met Lys Lys Gln
                245                 250                 255
His Pro Asn His Pro Leu Asn Glu Val Val Ser Ala Asn Val Gly Ala
            260                 265                 270
Met Arg Glu His Tyr Ala Arg Gly Leu Tyr Ala Thr Gly Arg Phe Tyr
        275                 280                 285
Glu Lys Lys Lys Lys Ala Glu Ala Ala Asn Ile Tyr Tyr Arg Thr Ala
    290                 295                 300
Ile Thr Asn Tyr Pro Asp Thr Leu Leu Val Ala Lys Cys Gln Lys Arg
305                 310                 315                 320
Leu Asp Arg Ile Ser Lys His Thr Ser
                325
```

<210> 671
<211> 212
<212> PRT
<213> Chlamydia pneumoniae

<400> 671

```
Ile Glu Tyr Leu Ser Ile Leu Pro Lys Ile Glu Ile Asn Met Arg Leu
1               5                  10                  15
Phe Ser Leu Gly Thr Ile Tyr Leu Phe Phe Ser Leu Ala Leu Ser Ser
            20                  25                  30
Cys Cys Gly Tyr Ser Ile Leu Asn Ser Pro Tyr His Leu Ser Ser Leu
        35                  40                  45
```

904

Gly Lys Ser Leu Leu Gln Glu Arg Ile Phe Ile Ala Pro Ile Lys Glu
    50   55   60
Asp Pro His Gly Gln Leu Cys Ser Ala Leu Thr Tyr Glu Leu Ser Lys
65   70   75   80
Arg Ser Phe Ala Ile Ser Gly Arg Ser Ser Cys Ala Gly Tyr Thr Leu
                85   90   95
Lys Val Glu Leu Leu Asn Gly Ile Asp Lys Asn Ile Gly Phe Thr Tyr
            100   105   110
Ala Pro Asn Lys Leu Gly Asp Lys Thr His Arg His Phe Ile Val Ser
            115   120   125
Asn Glu Gly Arg Leu Ser Leu Ser Ala Lys Val Gln Leu Ile Asn Asn
    130   135   140
Asp Thr Gln Glu Val Leu Ile Asp Gln Cys Val Ala Arg Glu Ser Val
145   150   155   160
Asp Phe Asp Phe Glu Pro Asp Leu Gly Thr Ala Asn Ala His Glu Phe
                165   170   175
Ala Leu Gly Gln Phe Glu Met His Ser Glu Ala Ile Lys Ser Ala Arg
            180   185   190
Arg Ile Leu Ser Ile Arg Leu Ala Glu Thr Ile Ala Gln Gln Val Tyr
    195   200   205
Tyr Asp Leu Phe
210

        <210> 672
        <211> 153
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 672
Pro Arg Arg Leu Leu Asn Arg Tyr Thr Met Thr Phe Phe Glu Gly Glu
1   5   10   15
Thr Val Phe Pro Ala Val Leu Ser Glu Leu His Ser Met Leu Asp Leu
                20   25   30
Ile Lys Arg Ala Gly Lys Gln Ser Lys Cys Pro Gln Glu Lys Leu Leu
            35   40   45
Lys Leu Glu Leu Ala Cys Glu Glu Leu Leu Val Asn Ile Ile Ser Tyr
    50   55   60
Ala Tyr Gln Gly Glu Asn Ser Pro Gly Thr Ile Ala Ile Ser Cys Ile
65   70   75   80
Ser His Arg Gly Asp Leu Glu Val Val Ile Lys Asp His Gly Pro Ser
                85   90   95
Phe Asn Pro Leu Ala Val Ser Ile Asn Ile Gln Glu Asp Leu Pro Leu
            100   105   110
Glu Gln Arg Lys Leu Gly Gly Leu Gly Ile Phe Leu Ala Lys Ser Ser
            115   120   125
Val Asp Glu Phe Leu Tyr Ala Arg Glu Asp His Cys Asn Ile Val His
    130   135   140
Leu Lys Met Leu Asn Gly Gln His Ser
145   150

        <210> 673
        <211> 152
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 673
Arg Ile Thr Ile Asn Gln Arg Lys Tyr Thr Met Ser Leu Asp Phe Phe
1   5   10   15
Glu Glu Phe Tyr His Gln Ser Ile Leu Asn Thr Gly Thr Ser Phe Pro
                20   25   30

905

Glu Gly Tyr Leu Asn Ile Ala Glu Ile Leu Ser Tyr Pro His Cys Thr
35   40   45
Asp Ala Asn Thr Asp Phe Leu Cys Ser Gln Ser Asp Asn Asp Phe Ile
50   55   60
Ile Ala Glu Ser Lys Asp Lys Leu Thr Leu Phe Asn Ala Asp Phe Ala
65   70   75   80
Ile Trp Leu Val Pro Glu Leu Val Gln Gly Gln Ala Val Thr Arg Gly
                        85   90   95
Tyr Ile Ala Val Ser Gln Gly Glu Gly Asn Tyr Glu Pro Glu Met Ala
                        100   105   110
Phe Glu Ala Ser Gly Gln Tyr Asn Gln Ser Ser Leu Ile Leu Glu Ala
                        115   120   125
Leu Gln Leu Tyr Leu Lys Asp Ile Lys Asp Thr Glu Asn Ala Leu Arg
    130   135   140
Ser Phe Arg Phe Asn Asn Asp His
145   150

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

<210> 674
<211> 442
<212> PRT
<213> Chlamydia pneumoniae

<400> 674
Thr Ile Lys Ser Pro His Met Lys Arg Pro Phe Phe Thr Tyr Leu Cys
1   5   10   15
Ile Ile Phe Tyr Gly Ser Cys Ala Ser Leu Ser Leu His Ala Gly Leu
                20   25   30
Ser Phe Pro Glu Val Arg Gly Ala Thr Ala Ala Val Val His Ala Asp
            35   40   45
Ser Gly Lys Val Phe Tyr Asp Lys Asp Ile Asp Ala Val Ile Tyr Pro
    50   55   60
Ala Ser Met Thr Lys Ile Ala Thr Ala Leu Phe Ile Leu Lys His Tyr
65   70   75   80
Pro Thr Val Leu Asp Thr Leu Ile Lys Val Lys Gln Asp Ala Ile Ala
                85   90   95
Ser Ile Thr Pro Gln Ala Lys Lys Gln Ser Gly Tyr Arg Ser Pro Pro
                100   105   110
His Trp Leu Glu Thr Asp Gly Ser Thr Ile Gln Leu His Leu Arg Glu
    115   120   125
Glu Leu Leu Gly Trp Asp Leu Phe His Ala Leu Leu Val Cys Ser Ala
    130   135   140
Asn Asp Ala Ala Asn Val Leu Ala Met Ala Cys Cys Gly Ser Val Glu
145   150   155   160
Lys Phe Met Asp Lys Leu Asn Phe Phe Leu Lys Glu Glu Ile Gly Cys
                165   170   175
Thr His Thr His Phe Asn Asn Pro His Gly Leu His His Pro Asn His
            180   185   190
Tyr Thr Thr Thr Arg Asp Leu Ile Ser Ile Met Arg Cys Ala Leu Lys
    195   200   205
Glu Pro Pro Phe Arg Gly Val Ile Ser Thr Thr Ser Tyr Lys Ile Gly
    210   215   220
Ala Thr Asn Leu His Gly Glu Arg Ile Leu Ser Pro Thr Asn Lys Leu
225   230   235   240
Leu Leu Pro Gly Ser Thr Tyr His Tyr Pro Pro Ala Leu Gly Gly Lys
                245   250   255
Thr Gly Thr Thr Lys Thr Ala Gly Lys Asn Leu Ile Met Ala Ala Glu
                260   265   270
Lys Asn Asn Arg Leu Leu Val Thr Ile Ala Thr Gly Tyr Ser Gly Pro
    275   280   285
Val Ser Asp Leu Tyr Gln Asp Val Ile Ala Leu Cys Glu Thr Val Phe
    290   295   300

906

```
Asn Glu Pro Leu Leu Arg Lys Glu Leu Val Pro Pro Ser Asp Cys Leu
305                     310             315                 320
Gln Leu Glu Ile Ala Asn Leu Gly Lys Leu Ser Cys Pro Leu Pro Glu
                325                 330                 335
Gly Leu Tyr Tyr Asp Phe Tyr Ala Ser Glu Asp Arg Glu Pro Leu Ser
            340                 345                 350
Val Ser Phe Ile Ala His Ala Asp Ala Phe Pro Ile Glu Gln Gly Asp
            355                 360                 365
Leu Leu Gly His Trp Val Phe Tyr Asp Asp Glu Gly Lys Lys Ile Ser
370                     375                 380
Ser Gln Pro Phe Tyr Ala Pro Cys Arg Phe Glu Arg Thr Ile Lys Pro
385                 390                 395                 400
Trp Lys Leu Tyr Met Lys Arg Val Phe Thr Ser Tyr Arg Thr Tyr Met
                405                 410                 415
Ser Ile Thr Met Leu Leu Met Tyr Phe Arg Ile Arg Lys His Arg Lys
                420                 425                 430
Tyr Lys Asn Leu Lys His Tyr Ser Lys Ile
            435                 440
```

        <210> 675
        <211> 74
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 675
```
Gly Lys Ser Thr Glu Gly Lys Ala Tyr His Cys Phe Leu Lys Gln Val
1               5               10                  15
Ser Ile Ala Leu Asn Arg Glu Glu Val Trp Asp Asn Pro His His Leu
            20                  25                  30
Met Phe Ile Leu Met Gln Phe Gln Gln Phe Ser Gly Glu Gln Asp Arg
        35                  40                  45
Phe Gly Ser Phe Leu Glu Ala Thr Ile Arg Asp Arg Val Ser Phe Leu
        50                  55                  60
Val Leu Gln Glu Lys Ile Ala Thr Leu Lys
65                      70
```

        <210> 676
        <211> 371
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 676
```
Arg Gly Ile Leu Tyr Val Thr Met Val Pro Phe Arg Gln His His Ala
1               5               10                  15
Tyr Gln Leu Leu Lys Gln Leu His Thr Ser Ala Ile Ser Glu Ala Asp
            20                  25                  30
Arg Val Ser Tyr Tyr Phe Lys Gln Asn Arg Ser Leu Gly Ser Lys Asp
        35                  40                  45
Arg Gln Trp Ile Gln Asn Ile Ile Phe Asn Ile Leu Arg His Arg Arg
        50                  55                  60
Leu Leu Glu Thr Leu Ile Leu Asp Ser Gly Glu Gln Val Thr Pro Glu
65                  70                  75                  80
Ala Leu Val Ala Lys Val Asn Glu Gly Val Leu Glu Asn Leu Asp Ser
                85                  90                  95
Tyr Ser Ala Ile Pro Trp Pro Val Arg Tyr Ser Ile Ser Asp Asp Leu
            100                 105                 110
Ala His Phe Leu Val Gln Asp Tyr Gly Glu Glu Gln Ala Glu Glu Ile
        115                 120                 125
Ala Lys Ile Trp Leu Thr Glu Ala Pro Ile Thr Ile Arg Val Asn Thr
        130                 135                 140
```

Asp Lys Ile Ser Val Lys Glu Leu Gln Glu Lys Leu Glu Tyr Pro Ser
145   150   155   160

Ser Pro Gly Glu Leu Pro Glu Ala Leu His Phe Ser Lys Arg His Pro
            165   170   175

Leu Gln Ser Thr Glu Ala Phe Arg Arg Gly Phe Phe Glu Ile Gln Asp
            180   185   190

Glu Asn Ser Gln Arg Ile Ser Gln Gly Ile Ser Leu Thr Asp Lys Asp
            195   200   205

Ile Val Leu Asp Phe Cys Ala Gly Ala Gly Gly Lys Ser Leu Ile Phe
    210   215   220

Ala Gln Lys Ala Lys His Val Val Ile Asn Asp Ser Arg Lys Ala Ile
225   230   235   240

Leu Gln Thr Ala Lys His Arg Leu Leu Arg Ala Gly Ala Arg Asn Phe
            245   250   255

Ser Leu Ala Asp Gln Leu Arg Leu Gly Ser Phe Ser Val Val Ile Val
            260   265   270

Asp Ala Pro Cys Ser Gly Thr Gly Val Phe Arg Arg His Pro Glu His
    275   280   285

Lys Trp Gln Phe Ser Lys Lys Leu Leu Leu Asn Tyr Val Arg Val Gln
    290   295   300

Lys Ser Ile Leu Lys Gln Ala Ser Ala Tyr Val Gly Pro Arg Gly Arg
305   310   315   320

Leu Val Tyr Ile Thr Cys Ser Leu Leu Lys Glu Glu Asn Glu Ala His
            325   330   335

Val Ala Tyr Met His Ser Leu Gly Trp Lys Glu Val His Arg Lys Thr
            340   345   350

Leu Pro Leu Gln Val Gly Lys Gly Asp Ala Phe Phe Thr Ser His Phe
            355   360   365

Gln Lys Ile
    370

<210> 677
<211> 388
<212> PRT
<213> Chlamydia pneumoniae

<400> 677
Val Pro Leu Ser Met Ile Leu Asp Phe Gln Phe Ser Ile Gly Tyr Tyr
1   5   10   15

Leu Arg Val Leu Glu Leu Ala Ile Arg Asp Gly Thr Arg Ile Leu Ala
            20   25   30

Tyr Asp Arg Lys Arg Leu Leu Leu Asp Ala Trp Pro Val Asn Asp Pro
            35   40   45

Leu Pro Thr Asn Tyr Asp Thr Ser Val Ser Thr Ile Arg Gln Val Ile
    50   55   60

His Glu Leu Phe Ser Trp Ser Ala Ile Ser Tyr Ser Ile Ser Ser Arg
65   70   75   80

Leu Leu Ala Ile Ile Glu Leu Arg Leu His Glu Glu Lys Pro Gln Thr
            85   90   95

Gly Trp Leu Tyr Arg Leu Phe Phe Pro Ser Lys Tyr His Ile Lys Lys
            100   105   110

Ala Ile Val Asp Lys Leu Cys Met Phe Lys Ser Leu Ile Leu Phe Glu
    115   120   125

Ser Lys Arg Pro Val Asp Lys Ile Val Gln Ala Ala Asn Lys Val Phe
    130   135   140

Ser Lys Gly Lys Ser Asn Phe Ser Ser Trp Glu Asp Phe Thr His Glu
145   150   155   160

Val Thr Val Ser Glu Val Gln Thr Pro Leu Ala Gly Glu Val Gln Arg
            165   170   175

Arg Leu Ala Ala Asp Ala Ser Leu Gln Met Ile Ile Glu Ala Leu Thr
            180   185   190

```
Thr Leu Leu Glu Gly His Thr Ala Tyr Leu Pro Leu Ser Leu Glu Leu
        195                 200             205
Leu Asn Gln Phe Ile Gly Glu Lys Ala Gln Pro Leu Lys Thr Leu Ser
        210                 215             220
Glu Lys Ser Tyr Val Leu Leu Arg Glu Leu Ile Gln Leu Phe Ser Leu
225                 230             235                 240
Ser Ala Glu Asp Phe Gln Thr Ile Ile Met Ser Ile Ile Ser Asp Ser
                245             250                 255
Leu Ser Glu Val Leu Ala Asn Ser Leu Ile Gly Asn Gln Pro Leu Thr
                260             265                 270
Phe His Gly Lys Thr Phe Val Gly Leu Trp Gln Glu Thr Ala Leu Ala
            275             280             285
Ser Pro Glu Asp Ser Lys Leu Ala Leu Gly Phe Leu Ala Glu Val Leu
    290             295                 300
Arg Lys Val Ile Val Glu Lys Lys Leu His Val Ser Lys Ser Asp Asn
305                 310                 315                 320
Thr Thr Pro Glu Glu Val Gly Asn Ile Tyr Ser Ile Arg Asp Gln Asn
                325             330             335
Pro Ala Leu Trp Asp Lys Met Ile Thr Met Leu Leu Met Arg Trp Leu
            340             345             350
Leu Asp Tyr Asp Arg Asp Ile Gly Ile Ala Leu Arg Lys Ala Ala Glu
            355             360             365
Tyr Tyr Asn Pro His Pro Ser Phe Trp Arg Gln Phe Leu Arg Leu Trp
370             375             380
Gln Arg Arg Pro
385


        <210> 678
        <211> 390
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 678
Ser Met Gly Thr Pro Ile Ser Gly Asn Asp Gly Asp Arg Asn Thr Ile
1               5               10                  15
Ser Asp Pro Leu Glu Glu Ser Ala Ala Glu Glu Gly Asp Ser Asp Leu
            20              25              30
Glu Asp Arg Val Ser Glu Ser Ala Thr Gln Val Ile Glu Thr Ile Ala
        35              40              45
Asp Thr Gly Ile Pro Glu Ala Thr Pro Ser Glu Gly Thr Asn Ser Asp
    50              55              60
Leu Asn Ser Asp Leu Val Asp Arg Val Glu Tyr Glu Ala Arg Gly Ser
65              70              75              80
Leu Leu Thr Thr Met Leu Ala Arg Ile Arg Lys Ala Val Ser Gln Ile
                85              90              95
Trp Met His Val Lys Thr Lys Arg His Pro Lys Glu Gln Gly Val Arg
            100             105             110
Ser Leu Gly Asp Ile Pro Cys Asp Leu Leu Lys Ala Thr Arg Leu Pro
        115             120             125
Lys Glu Thr Ala Glu Pro Pro Tyr Phe Tyr Ala Leu Glu Thr Ala Leu
    130             135             140
Ala Ser Cys Arg Ser Phe Phe His Val Phe Leu Arg Leu Phe Thr
145             150             155                 160
Leu Leu Arg Arg Gln His Pro Glu Ala Pro Leu Asp Leu Cys Gly Thr
            165             170             175
Asp Pro Ile Ser Pro Glu Ala Ala Val Ala Phe Ala Leu Ile Leu Arg
        180             185             190
Ser Cys Cys Lys Trp Val Ala Thr Asp Ala Val Gln Glu Gly Leu Pro
    195             200             205
Leu Glu Val Ile Glu Glu Ala Gly Met Tyr Asn Ala Phe Ser Leu Glu
    210             215             220
```

```
Ala Thr Thr Thr Val Glu Glu Val Ser Lys Arg Leu Ser Glu Leu Leu
225             230             235             240
Tyr Ser Asp Lys Arg Ile Asp Gly Leu Ala Asn Val Arg Gly Ile Thr
            245                 250                 255
Lys Ile Ile Thr Ser Pro Tyr Leu Gly Ala Gly Gln Cys Val Ser Val
            260                 265                 270
Val Asp Asn Leu Lys Thr Tyr Asp Leu Gly Arg Asn Tyr Thr Gln Val
            275                 280                 285
Leu Ala Cys Ala Ser Gln Ile Asp Glu Phe Ala Asp Lys Gly Glu Asn
            290             295                 300
Glu Ala Leu Val Met Lys Asp Ile Leu Tyr Leu Val Arg Gln Asp Arg
305                 310                 315                 320
Ser Lys Glu Leu Gly Asp Phe Leu Met Met Trp Ser Glu Glu His Ala
                325                 330                 335
Ser Glu Val Asn Tyr Asp Val Val Leu Ala Ile Leu Glu Val Asn Leu
            340                 345                 350
Pro Ile Leu Glu Glu Asp Tyr Arg Ser His Pro Leu Ala Tyr Gln Lys
            355                 360                 365
Lys Leu Asn Tyr Val Ile Cys Gln Phe Phe Cys Ser Glu Arg Leu Thr
370                 375                 380
Ser Ile Glu Pro Lys Asp
385                 390
```

        <210> 679
        <211> 385
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 679
```
Arg Ile Ala Met Gly Ile Asn Pro Ser Gly Asn Arg Ser Pro Asp Asp
1               5               10              15
Val Trp Val Arg Gly Ala Gln Gly Asp Ser Ser Ser Thr Gln Gly Thr
            20              25              30
Gly Ala Thr Asn Ser Asn Leu Gly Ala His Asn Val Thr Thr Ser Thr
        35              40              45
Ser Gln Pro Gln Val Ala Ser Lys Ala Lys Gln Leu Trp Gln Thr Val
    50              55              60
Arg Glu Phe Phe Leu Gly Lys Lys Ser Pro Asp Ser Ser Gln Gly Ala
65              70              75              80
Ser Gly Pro Ala Met Gln Ser Pro Ser Gly Pro Thr Ile Arg Pro Thr
            85              90              95
Arg Pro Ala Pro Pro Pro Thr Thr Gly Gly Ala Asn Ala Lys Arg
            100             105             110
Pro Ala Thr His Gly Lys Gly Arg Ala Pro Gln Pro Pro Thr Ala Gly
        115             120             125
Ser Ser Ser Gly Ser Glu Gln Pro Thr Ala Met Ser Ser Glu Val Ala
    130             135             140
Lys Leu Val Ser Glu Leu Lys Asp Ala Val His Ser His Ala Glu Ser
145             150             155             160
Gln Lys Val Leu Lys Lys Val Ser Gln Glu Leu Gln Thr Lys Trp Thr
            165             170             175
Asp Trp Glu Asn Asn Arg Gly Pro Asp Tyr Leu Leu His Gly Tyr Arg
            180             185             190
Val Ile Ala Arg Ala Leu Gln Gln Thr Tyr Thr Glu Gln Ser Met Leu
        195             200             205
Ile Glu Gly Thr Ser Ser Thr Gly Pro Val Pro Gln Ala Val Thr Val
        210             215             220
Ala Lys Asp Ala Val Thr Gln Thr Val Arg Gly Ala Ile Lys Asn Leu
225             230             235             240
Glu Asn Pro Lys Pro Gly Asn Asp Pro Asp Gly Val Leu Met Gln Val
            245             250             255
```

910

```
Val Ile Ser Leu Gly Ile Glu Gly Pro Thr Leu Asp Pro Gly Glu Ser
            260               265               270
Ile Gln Asn Phe Leu Glu Thr Arg Val Ser Asp Phe Gly Gly Asp Asp
            275               280               285
Ser Asp Ile Asp Tyr Thr Ser Asp Ile Ala Arg Leu Gly Ser Ala Leu
    290               295               300
Asp Arg Val Arg Glu Asn His Pro Asn Glu Met Pro Arg Ile Trp Ile
305               310               315               320
Ala Leu Ala Arg Glu Leu Gly Ala Ala Val His Ser His Ala Thr Ser
                325               330               335
Val Arg Ile Ala Asn Ala Gly Lys Asn His Thr Arg Asp Val Val Arg
            340               345               350
Met Ala Asn Glu Ser Ser Arg Leu Leu Gln Gly Met Lys Val Leu Ser
            355               360               365
Val Gly Ala Trp Ala Asn Thr Met Thr Val Leu Ile Gly Asp Leu Phe
    370               375               380
Glu
385

        <210> 680
        <211> 216
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 680
Lys Ile Ile Met Ser Val Asn Pro Ser Gly Asn Ser Lys Asn Asp Leu
1               5               10                  15
Trp Ile Thr Gly Ala His Asp Gln His Pro Asp Val Lys Glu Ser Gly
            20                25                  30
Val Thr Ser Ala Asn Leu Gly Ser His Arg Val Thr Ala Ser Gly Gly
            35                40                  45
Arg Gln Gly Leu Leu Ala Arg Ile Lys Glu Ala Val Thr Gly Phe Phe
    50                  55                  60
Ser Arg Met Ser Phe Phe Arg Ser Gly Ala Pro Arg Gly Ser Gln Gln
65                  70                  75                  80
Pro Ser Ala Pro Ser Ala Asp Thr Val Arg Ser Pro Leu Pro Gly Gly
                85                  90                  95
Asp Ala Arg Ala Thr Glu Gly Ala Gly Arg Asn Leu Ile Lys Lys Gly
            100               105               110
Tyr Gln Pro Gly Met Lys Val Thr Ile Pro Gln Val Pro Gly Gly Gly
    115               120                   125
Ala Gln Arg Ser Ser Gly Ser Thr Thr Leu Lys Pro Thr Arg Pro Ala
    130               135               140
Pro Pro Pro Pro Lys Thr Gly Gly Thr Asn Ala Lys Arg Pro Ala Thr
145               150               155               160
His Gly Lys Gly Pro Ala Pro Gln Pro Pro Lys Thr Gly Gly Thr Asn
                165               170               175
Ala Lys Arg Ala Ala Thr His Gly Lys Gly Pro Ala Pro Gln Pro Pro
            180               185               190
Lys Gly Ile Leu Lys Gln Pro Gly Gln Ser Gly Thr Ser Gly Lys Lys
    195               200               205
Arg Val Ser Trp Ser Asp Glu Asp
    210               215

        <210> 681
        <211> 404
        <212> PRT
        <213> Chlamydia pneumoniae
```

911

<400> 681

```
Gly Tyr Met Asp Lys Leu Thr Val Gln Asp Leu Ser Pro Glu Glu Lys
1               5                   10                  15
Lys Val Leu Val Arg Val Asp Phe Asn Val Pro Met Gln Asp Gly Lys
            20                  25                  30
Ile Leu Asp Asp Ile Arg Ile Arg Ser Ala Met Pro Thr Ile Asn Tyr
        35                  40                  45
Leu Leu Lys Lys His Ala Ala Val Ile Leu Met Ser His Leu Gly Arg
    50                  55                  60
Pro Lys Gly Gln Gly Phe Gln Glu Glu Tyr Ser Leu Gln Pro Val Val
65                  70                  75                  80
Asp Val Leu Glu Gly Tyr Leu Gly His His Val Pro Leu Ala Pro Asp
                85                  90                  95
Cys Val Gly Glu Val Ala Arg Gln Ala Val Ala Gln Leu Ser Pro Gly
            100                 105                 110
Arg Val Leu Leu Leu Glu Asn Leu Arg Phe His Ile Gly Glu Glu His
        115                 120                 125
Pro Glu Lys Asp Pro Thr Phe Ala Ala Glu Leu Ser Ser Tyr Gly Asp
    130                 135                 140
Phe Tyr Val Asn Asp Ala Phe Gly Thr Ser His Arg Lys His Ala Ser
145                 150                 155                 160
Val Tyr Val Val Pro Gln Ala Phe Pro Gly Arg Ala Ala Ala Gly Leu
            165                 170                 175
Leu Met Glu Lys Glu Leu Glu Phe Leu Gly Arg His Leu Leu Thr Ser
            180                 185                 190
Pro Lys Arg Pro Phe Thr Ala Ile Leu Gly Gly Ala Lys Ile Ser Ser
        195                 200                 205
Lys Ile Gly Val Ile Glu Ala Leu Leu Asn Gln Val Asp Tyr Leu Leu
    210                 215                 220
Leu Ala Gly Gly Met Gly Phe Thr Phe Leu Gln Ala Leu Gly Lys Ser
225                 230                 235                 240
Leu Gly Asn Ser Leu Val Glu Lys Ser Ala Leu Asp Leu Ala Arg Asn
                245                 250                 255
Val Leu Lys Ile Ala Lys Ser Arg Asn Val Thr Ile Val Leu Pro Ser
            260                 265                 270
Asp Val Lys Ala Ala Glu Asn Leu Gln Ser Lys Glu Tyr Ser Val Ile
    275                 280                 285
Ser Ile Asp Gln Gly Ile Pro Pro His Leu Gln Gly Phe Asp Ile Gly
    290                 295                 300
Pro Arg Thr Thr Glu Glu Phe Ile Arg Ile Ile Asn Gln Ser Ala Thr
305                 310                 315                 320
Val Phe Trp Asn Gly Pro Val Gly Val Tyr Glu Val Pro Pro Phe Asp
                325                 330                 335
Ser Gly Ser Ile Ala Ile Ala Asn Ala Leu Gly Asn His Pro Ser Ala
            340                 345                 350
Val Thr Val Val Gly Gly Gly Asp Ala Ala Ala Val Val Ala Leu Ala
            355                 360                 365
Gly Cys Ser Thr Lys Val Ser His Val Ser Thr Gly Gly Gly Ala Ser
    370                 375                 380
Leu Glu Phe Leu Glu Gln Gly Phe Leu Pro Gly Thr Glu Val Leu Ser
385                 390                 395                 400
Pro Ser Lys Ser
```

<210> 682
<211> 428
<212> PRT
<213> Chlamydia pneumoniae

912

<400> 682

```
Tyr Ser Met Leu Pro Leu Ile Ile Phe Val Leu Leu Cys Gly Phe Tyr
1               5                   10                  15
Thr Ser Trp Asn Ile Gly Ala Asn Asp Val Ala Asn Ala Val Gly Pro
            20                  25                  30
Ser Val Gly Ser Gly Val Leu Thr Leu Arg Gln Ala Val Val Ile Ala
        35                  40                  45
Ala Ile Phe Glu Phe Phe Gly Ala Leu Leu Leu Gly Asp Arg Val Ala
    50                  55                  60
Gly Thr Ile Glu Ser Ser Ile Val Ser Val Thr Asn Pro Met Ile Ala
65                  70                  75                  80
Ser Gly Asp Tyr Met Tyr Gly Met Thr Ala Ala Leu Leu Ala Thr Gly
                85                  90                  95
Val Trp Leu Gln Leu Ala Ser Phe Phe Gly Trp Pro Val Ser Thr Thr
            100                 105                 110
His Ser Ile Val Gly Ala Val Ile Gly Phe Gly Leu Val Leu Gly Lys
            115                 120                 125
Gly Thr Ile Ile Tyr Trp Asn Ser Val Gly Ile Ile Leu Ile Ser Trp
    130                 135                 140
Ile Leu Ser Pro Phe Met Gly Gly Cys Val Ala Tyr Leu Ile Phe Ser
145                 150                 155                 160
Phe Ile Arg Arg His Ile Phe Tyr Lys Asn Asp Pro Val Leu Ala Met
                165                 170                 175
Val Arg Val Ala Pro Phe Leu Ala Ala Leu Val Ile Met Thr Leu Gly
            180                 185                 190
Thr Val Met Ile Ser Gly Gly Val Ile Leu Lys Val Ser Ser Thr Pro
            195                 200                 205
Trp Ala Val Ser Gly Val Leu Val Cys Gly Leu Leu Ser Tyr Ile Ile
    210                 215                 220
Thr Phe Tyr Tyr Val His Thr Lys His Cys Ser Tyr Ile Ser Asp Thr
225                 230                 235                 240
Pro Lys Lys Gly Ser Leu Thr Tyr Arg Leu Lys Glu Arg Gly Gly Asn
                245                 250                 255
Tyr Gly Arg Lys Tyr Leu Val Val Glu Arg Ile Phe Ala Tyr Leu Gln
            260                 265                 270
Ile Ile Val Ala Cys Phe Met Ala Phe Ala His Gly Ser Asn Asp Val
            275                 280                 285
Ala Asn Ala Ile Ala Pro Val Ala Gly Val Leu Arg Gln Ala Tyr Pro
    290                 295                 300
Ala Ser Tyr Thr Ser Tyr Thr Leu Ile Arg Leu Met Ala Phe Gly Gly
305                 310                 315                 320
Ile Gly Leu Val Ile Gly Leu Ala Ile Trp Gly Trp Arg Val Ile Glu
            325                 330                 335
Thr Val Gly Cys Lys Ile Thr Glu Leu Thr Pro Ser Arg Gly Phe Ser
            340                 345                 350
Val Gly Met Gly Ser Ala Leu Thr Ile Ala Leu Ala Ser Ile Leu Gly
    355                 360                 365
Leu Pro Ile Ser Thr Thr His Val Val Val Gly Ala Val Leu Gly Ile
370                 375                 380
Gly Leu Ala Arg Gly Ile Arg Ala Ile Asn Leu Asn Ile Ile Lys Asp
385                 390                 395                 400
Ile Val Leu Ser Trp Phe Ile Thr Leu Pro Ala Gly Ala Leu Leu Ser
            405                 410                 415
Ile Leu Phe Phe Phe Ala Leu Arg Ala Leu Phe His
            420                 425
```

<210> 683
<211> 248
<212> PRT
<213> Chlamydia pneumoniae

913

<400> 683

Asn Gly Ile Arg Ser His Lys Ser Phe Thr Arg Ser Phe Arg Gln Val
1   5   10   15

Ile Ile Ala Lys Lys Ala Ile Leu Met Gln Thr Leu Ala Arg Leu Phe
            20   25   30

Gly Gln Ser Pro Phe Ala Pro Leu Gln Ala His Leu Glu Met Val Val
        35   40   45

Ser Cys Val Glu Tyr Met Leu Pro Ile Phe Thr Ala Leu Arg Asp Gly
    50   55   60

Arg Tyr Glu Glu Leu Leu Glu Met Ala Lys Leu Val Ser Asp Lys Glu
65   70   75   80

Tyr Gln Ala Asp Cys Ile Lys Asn Asp Met Arg Asn His Leu Pro Ala
                85   90   95

Gly Leu Phe Met Pro Ile Ser Arg Ala Gly Ile Leu Glu Ile Ile Ser
            100   105   110

Ile Gln Asp Ser Ile Ala Asp Thr Ala Glu Asp Val Ala Ile Leu Leu
        115   120   125

Thr Ile Arg Arg Leu Asn Phe Tyr Pro Ser Met Glu Thr Leu Phe Phe
    130   135   140

Arg Phe Leu Glu Lys Asn Leu Glu Ala Phe Glu Leu Thr Met Thr Leu
145   150   155   160

Leu His Glu Phe Asn Gln Leu Leu Glu Ser Ser Phe Gly Gly Arg Lys
                165   170   175

Ala Asp Lys Ala Arg Leu Leu Val Gly Arg Val Ala Lys Ser Glu His
            180   185   190

Glu Ser Asp Val Leu Gln Arg Glu Leu Met Gln Ile Phe Phe Ser Asp
        195   200   205

Asp Phe Ile Ile Pro Glu Lys Glu Phe Tyr Leu Trp Leu Gln Val Ile
    210   215   220

Arg Arg Thr Ala Gly Ile Ser Asp Ser Ser Glu Lys Leu Ala His Arg
225   230   235   240

Ile Asn Met Thr Leu Glu Glu Lys
                245

<210> 684
<211> 348
<212> PRT
<213> Chlamydia pneumoniae

<400> 684

Thr Ser Lys Gly Leu His Lys Asn Ser Leu Phe Arg Asn Asn Asn Leu
1   5   10   15

Pro Lys Arg Ser Cys Lys Arg Leu Met Ala Ser Asn Pro Ile Leu Gln
            20   25   30

Ile Glu Asp Leu Ser Ile Thr Leu Ala Lys Gln Arg Gln Gln Tyr Pro
        35   40   45

Ile Val Gln Ser Leu Ser Phe Thr Ile Asn Glu Gly Gln Thr Leu Ala
    50   55   60

Ile Ile Gly Glu Ser Gly Ser Gly Lys Ser Val Ser Ala His Ala Ile
65   70   75   80

Leu Arg Leu Leu Pro Cys Pro Pro Phe Ser Val Ser Gly Gln Val Asn
                85   90   95

Phe Gln Gly His Asn Leu Leu Thr Ala Ser Arg Ser Ile Gln Lys Lys
            100   105   110

Ile Ile Gly Thr Glu Ile Ser Met Ile Phe Gln Asn Pro Gln Ala Ser
        115   120   125

Leu Asn Pro Val Phe Thr Ile Glu Gln Gln Phe Arg Glu Ile Ile His
    130   135   140

Thr His Leu Ala Leu Thr Ala Glu Val Ala Lys Glu Lys Met Leu Tyr
145   150   155   160

```
Ala Leu Glu Glu Thr Gly Phe His Asp Pro Arg Leu Cys Leu Asn Leu
                165                 170             175
Tyr Pro His Gln Leu Ser Gly Gly Met Leu Gln Arg Ile Cys Ile Ala
            180                 185             190
Met Ala Leu Leu Cys Ser Pro Lys Leu Leu Ile Ala Asp Glu Pro Thr
            195                 200             205
Thr Ala Leu Asp Val Ser Val Gln Tyr Gln Ile Leu Gln Leu Leu Lys
    210             215                 220
Thr Leu Gln Lys Lys Thr Gly Met Ser Leu Leu Ile Ile Thr His Asn
225             230                 235             240
Met Gly Val Val Ala Glu Thr Ala Asp Asp Val Leu Val Leu Tyr Ala
            245                 250             255
Gly Arg Met Val Glu Cys Ala Pro Ala Val Gln Met Phe His Asn Pro
            260                 265             270
Ser His Pro Tyr Thr Arg Asp Leu Leu Ala Ser Arg Pro Ser Leu Gln
    275                 280             285
Pro Gln Gln Leu Gly Ser Phe Asn Pro Ile Pro Gly Gln Pro Pro His
    290                 295             300
Tyr Thr Ala Phe Pro Ser Gly Cys Arg Tyr His Pro Arg Cys Ser Lys
305             310             315                 320
Ile Leu Asn Arg Cys Ser Ala Glu Ala Pro Glu Ile Tyr Pro Val Arg
            325             330                 335
Glu Gly His Lys Val Arg Cys Trp Leu Tyr Asp Asp
            340             345
```

```
Gly Val Gly Cys Met Thr Thr Asn Phe Pro Gln Pro Leu Ile Gln Ala
1               5                 10              15
Thr Ser Leu Thr Lys His Tyr Tyr Lys Arg Ser Phe Trp Phe Gln Gly
            20                  25              30
Lys Thr Ile Ala Ser Arg Pro Val Asp Asp Val Ser Phe Ser Leu Tyr
        35              40              45
Ser Arg Arg Ala Val Gly Leu Ile Gly Glu Ser Gly Ser Gly Lys Ser
    50                  55              60
Thr Leu Ala Leu Ala Leu Ala Gly Leu Leu Pro Leu Thr Ser Gly Phe
65              70              75                  80
Leu Thr Phe Asn Gly Thr Pro Ile Lys Leu His Ser Lys His Gly Arg
            85              90                  95
His Gln Leu Arg Ser Gln Val Arg Leu Val Phe Gln Asn Pro Gln Ala
        100             105                 110
Ser Leu Asn Pro Arg Lys Thr Ile Leu Asp Ser Leu Gly His Ser Leu
    115                 120             125
Leu Tyr His Lys Leu Val Pro Lys Glu Lys Val Leu Ala Thr Val Arg
    130                 135             140
Glu Tyr Leu Glu Leu Val Gly Leu Ser Glu Glu Tyr Phe Tyr Arg Tyr
145             150                 155             160
Pro His Gln Leu Ser Gly Gly Gln Gln Gln Arg Val Ser Ile Ala Arg
            165             170                 175
Ala Leu Leu Gly Val Pro Gln Leu Ile Ile Cys Asp Glu Ile Val Ser
            180             185                 190
Ala Leu Asp Leu Ser Ile Gln Ala Gln Ile Leu Asn Met Leu Ala Glu
    195                 200             205
Leu Gln Lys Lys Leu Ser Leu Thr Tyr Leu Phe Ile Ser His Asp Leu
    210             215                 220
Ala Val Val Arg Ser Phe Cys Thr Glu Val Phe Ile Met Tyr Lys Gly
225             230             235                 240
```

```
Gln Ile Val Glu Lys Gly Asn Thr Lys Arg Ile Phe Ser Asp Pro Gln
              245                 250                 255
His Pro Tyr Thr Arg Met Leu Leu Asn Ala Gln Leu Pro Glu Thr Pro
              260                 265                 270
Asp Gln Arg Gln Ser Lys Pro Ile Phe Gln Glu Tyr His Lys Asp Ser
              275                 280                 285
Glu Glu Ser Cys Ser Thr Gly Cys Tyr Phe Tyr Asn Arg Cys Pro Gln
              290                 295                 300
Lys Gln Glu Ala Cys Lys Ser Glu Ile Ile Pro Asn Gln Gly Asp Ala
305                 310                 315                 320
His His Thr Tyr Arg Cys Ile His
              325
```

```
Glu Lys Ser Gly Asp Ile Val Thr Glu Glu Ile Ser Lys Asp Thr Ile
1               5                   10                  15
Ile Glu Val Ala Ile Asp Asp Ile Arg Val Ser Pro Phe Gln Pro Arg
              20                  25                  30
Arg Val Phe Ser Asn Glu Glu Leu Gln Glu Leu Ile Ala Ser Ile Lys
              35                  40                  45
Ala Val Gly Leu Ile His Pro Pro Val Val Arg Glu Ile Cys Thr Gly
         50                  55                  60
Asp Arg Val Leu Tyr Tyr Glu Leu Ile Ala Gly Glu Arg Arg Trp Arg
65                  70                  75                  80
Ala Met Gln Leu Ala Gly Ala Thr Thr Ile Pro Val Ile Leu Lys His
              85                  90                  95
Val Ile Ala Asp Gly Thr Ala Ala Glu Ala Thr Leu Ile Glu Asn Ile
              100                 105                 110
Gln Arg Val Asn Leu Asn Pro Ile Glu Met Ala Glu Ala Phe Lys Arg
         115                 120                 125
Leu Ile His Val Phe Gly Leu Thr Gln Asp Lys Val Ala Tyr Lys Val
         130                 135                 140
Gly Lys Lys Arg Ser Thr Val Ala Asn Tyr Leu Arg Leu Leu Ala Leu
145                 150                 155                 160
Ser Lys Thr Ile Gln Glu Ser Leu Leu Gln Gly Gln Ile Thr Leu Gly
              165                 170                 175
His Ala Lys Val Ile Leu Thr Leu Glu Asp Pro Ile Leu Arg Glu Lys
         180                 185                 190
Leu Asn Glu Ile Ile Ile Gln Glu His Leu Ala Val Arg Glu Ala Glu
         195                 200                 205
Leu Ile Ala Lys Gln Leu Ile Ser Glu Glu Gly Ser Ser Ile Glu Leu
         210                 215                 220
Lys Pro Thr Pro Leu Asp Met Ala Glu Ser Ser Lys Gln His Glu Glu
225                 230                 235                 240
Leu Gln Gln Arg Leu Ser Asp Leu Cys Gly Tyr Lys Val Gln Ile Lys
              245                 250                 255
Thr Arg Gly Ser Lys Ala Thr Val Ser Phe His Leu Gln Asn Thr Gln
              260                 265                 270
Asp Leu Gln Lys Leu Glu Ala Trp Leu Ser Ser His Gly Thr Leu Ser
         275                 280                 285
Glu Ser Leu Ser
         290
```

<210> 687
<211> 64
<212> PRT
<213> Chlamydia pneumoniae

<400> 687
Phe Pro Gln Ser Gln Tyr Leu Leu Ile Phe Pro Asn Arg Ile Leu Asp
1   5   10   15
Leu Gln Ala Phe Glu Ile Leu Asp Val Gln Gly Met Leu Thr Asp Gln
        20   25   30
Arg Lys His Ile Gln Met Leu His Lys His Asn Ser Ile Glu Ile Phe
    35   40   45
Leu Ser Asn Met Val Val Glu Val Lys Leu Phe Phe Lys Thr Leu Lys
50   55   60

<210> 688
<211> 66
<212> PRT
<213> Chlamydia pneumoniae

<400> 688
Ala Lys Asp Ser Met Met Arg Gly Gly Arg Leu Phe Arg Val Tyr Gln
1   5   10   15
Glu Leu Phe Phe Phe Ser Ser Val Tyr Val Cys Glu Gln Arg Arg Pro
        20   25   30
Arg Lys Leu Tyr Pro Ser Leu Gln His Leu Asn Phe Pro Ile Glu Lys
    35   40   45
Pro Arg Phe Leu Leu Lys Gly Phe Lys Lys Glu Leu His Phe Tyr Asn
50   55   60
His Val
65

<210> 689
<211> 238
<212> PRT
<213> Chlamydia pneumoniae

<400> 689
Arg Lys Ile His Lys Asn Leu Arg His Ala Tyr Arg Phe Ser Thr Pro
1   5   10   15
Asn Cys Arg Ser Phe Met Gln Lys Leu Val His Asn Ile Trp Lys Lys
        20   25   30
Phe Tyr Ser Phe Ser Ser Ala Ile Ala Ile Cys Ile Val Leu Ala Ser
    35   40   45
Phe Leu Ser Leu Lys Ile Val Ser Asn Thr Tyr Lys His Ser Gln Ala
50   55   60
Lys Arg Asn Ser Ile Leu Leu Leu Thr Arg Ala Ala Glu Val Ala Val
65   70   75   80
Ser Gln Gly Phe Leu Pro Ser Lys Ser Ala Leu Ser Ser Leu Glu Gln
                85   90   95
Ala Tyr His Leu Gly Gly Glu Ser Met Lys Pro Tyr Ala Gly Phe Leu
            100   105   110
Ala Ser Cys Phe Tyr Ile His Asn Glu Pro Leu Arg Gly Ala Tyr Tyr
        115   120   125
Ala Gly Leu Ala Tyr Asn Asn Ser Gln Ala Leu Gln Leu Pro His Pro
    130   135   140
Ile Gln Lys Leu Leu Lys Glu Ile Ser Glu Ala Gln Ala Asp Gln Leu
145   150   155   160
Tyr Asp Val Ala Leu Ser Lys Ser Tyr Gln Leu Leu Gln Thr Ala Asn
                165   170   175

917

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```
Ser Ser Pro Glu Tyr Pro Thr Leu Ser Phe Leu Thr Leu Leu Arg Val
            180                 185                 190
Ile Glu Leu Lys Glu Leu Leu His Gln Asp Val Ser Gln Asp Phe Ala
        195                 200                 205
Ala Leu Lys Ser Ser Pro Leu Phe His Gln Phe Glu Arg Met Tyr Ser
    210                 215                 220
Asp Gly Glu Trp Thr Leu Ser Lys Arg Phe Gly Lys Lys Gly
225                 230                 235
```

<210> 690
<211> 254
<212> PRT
<213> Chlamydia pneumoniae

<400> 690
```
Ser Leu Met Leu Ile Val Leu Ala Phe Arg Gln Val Phe Phe Ser His
1               5                   10                  15
Ser Arg Ser Gln Leu Asp Arg Leu Lys Asn Tyr Leu Arg Leu Leu Lys
            20                  25                  30
Gln Asn Phe Ala Ile Thr Leu Pro Lys Glu Arg Thr Ser Lys Gly His
        35                  40                  45
Ser Leu Met Leu Thr Phe Asp Phe Ala Ser Phe Asp Phe Tyr Thr Asn
    50                  55                  60
Ile Phe Pro Phe Leu Glu Glu Gln Lys Ile Pro Ala Val Val Gly Val
65                  70                  75                  80
Ala Ser Arg Tyr Ile Pro Ser Asn Ala Ala Gln Asp Leu His Pro Ser
                85                  90                  95
His Arg Leu Lys Pro Ser Glu Thr Leu Ala Phe Gln Asp Glu Ile Phe
            100                 105                 110
Ser Asn Tyr Met Pro Phe Cys Cys Gln Asn Glu Leu Ile Glu Met Ala
            115                 120                 125
Lys Ser Pro Tyr Ile Gln Leu Ala Ser Ser Gly Phe Ala Ile Arg Asn
    130                 135                 140
Leu Met Asn Asn Pro Pro Tyr Leu Thr Thr Glu Ile Leu Leu Ser Arg
145                 150                 155                 160
His His Ile Glu Thr Ile Thr Gly Ala Lys Pro Leu Ala Phe Leu Phe
                165                 170                 175
Pro Phe Gly Lys Ser Asp Pro Thr Ser Arg Lys Leu Ala Ala Asp His
            180                 185                 190
Tyr Pro Tyr Ser Phe Leu Leu Gly Asn Thr Ile Asn Arg Lys Leu Lys
        195                 200                 205
Thr His Asn Ile Tyr Arg Leu Asp Ile Lys Pro Met Gln Tyr Val Cys
    210                 215                 220
Pro Ser Leu Phe Gln Ser Ser Arg Tyr Leu Lys Asn Trp Ile Lys Glu
225                 230                 235                 240
Lys Ser Lys Gln Leu Tyr Leu Lys Lys Gln Leu Pro Lys Arg
                245                 250
```

<210> 691
<211> 407
<212> PRT
<213> Chlamydia pneumoniae

<400> 691
```
Ser Val Lys Asn Leu Lys Glu Asp Phe Pro Ile Phe Ala Ala Lys Ala
1               5                   10                  15
Lys Glu Asn Glu Pro Phe Ile Tyr Leu Asp Ser Ala Ala Thr Thr Gln
            20                  25                  30
Lys Pro Gln Gln Val Ile Asp Ala Val Ala Asn Phe Tyr Thr Ser Ser
        35                  40                  45
```

918

Tyr Ala Thr Val Asn Arg Ala Ile Tyr Ser Ser Ser Arg Asn Val Thr
50   55   60
Glu Ala Tyr Ala Ala Val Arg Glu Lys Val Arg Lys Trp Val Ser Ala
65   70   75   80
Ala Ser Asp Ser Glu Ile Val Phe Thr Arg Gly Thr Thr Ala Gly Leu
85   90   95
Asn Leu Leu Ala Ile Ser Val Asn Asp Leu Trp Ile Pro Lys Gly Gly
100   105   110
Val Val Leu Val Ser Glu Ala Glu His His Ala Asn Val Leu Ser Trp
115   120   125
Glu Ile Ala Cys Arg Arg Arg Gly Ser Leu Val Lys Lys Ile Arg Val
130   135   140
His Asp Ser Gly Leu Ile Asp Leu Asp Asp Leu Glu Lys Leu Leu Asn
145   150   155   160
Glu Gly Ala Gln Phe Val Ser Ile Pro His Val Ser Asn Val Thr Gly
165   170   175
Cys Val Gln Pro Leu Gln Gln Val Ala Glu Leu Val His Arg Tyr Asp
180   185   190
Ala Tyr Leu Ala Val Asp Gly Ala Gln Gly Ala Pro His Leu Pro Ile
195   200   205
Asp Val Gln Leu Trp Asp Val Asp Phe Tyr Val Phe Ser Ser His Lys
210   215   220
Ile Tyr Gly Pro Thr Gly Ile Gly Val Leu Tyr Gly Lys Lys Asp Leu
225   230   235   240
Leu Asp Gln Leu Pro Pro Val Glu Gly Gly Gly Asp Met Val Ala Ile
245   250   255
Tyr Asp His Gln Asn Pro Glu Tyr Leu Pro Ala Pro Met Lys Phe Glu
260   265   270
Ala Gly Thr Pro Asn Ile Ala Gly Val Leu Gly Leu Gly Ala Ala Leu
275   280   285
Asp Tyr Leu Asp Gly Leu Ser Ala Lys Phe Ile Tyr Asp Lys Glu Ile
290   295   300
Ala Leu Thr Thr Tyr Leu His Lys Glu Leu Leu Glu Ile Pro Gly Val
305   310   315   320
Glu Ile Leu Gly Pro Ser Ile Glu Glu Pro Arg Gly Ala Leu Ile Gly
325   330   335
Met Thr Ile Asp Gly Ala His Pro Leu Asp Leu Gly Phe Leu Leu Asp
340   345   350
Leu Arg Gly Ile Ala Val Arg Thr Gly His Gln Cys Ala Gln Pro Ala
355   360   365
Met Glu Arg Trp Asn Val Gly His Val Leu Arg Val Ser Leu Gly Ile
370   375   380
Tyr Asn Asp Glu Asp Asp Ile Asp Gln Phe Ile Leu Val Leu Gln Asp
385   390   395   400
Ser Leu Asp Lys Ile Arg Arg
405

<210> 692
<211> 423
<212> PRT
<213> Chlamydia pneumoniae

<400> 692
Leu Ser Val Leu Arg Gly Asp Lys Val Leu Val Ser Ile Glu Thr Phe
1   5   10   15
Ser Ser Ile Ala Ser Gly Ser Pro Val Gln Lys Ala Ala Glu Ala Cys
20   25   30
Tyr Thr Gln Tyr Ser Lys Gln Pro Ser Ser Lys Glu Val Leu Ser Ser
35   40   45
Phe Ser Trp Ile Gln Glu Leu Ser Leu Phe Pro Asp Arg Tyr Asn Leu
50   55   60

919

```
Ala Thr Gly Ala Ser Glu Leu Ile Lys Gln His Trp Leu His Asn Asn
65                  70              75                      80
His Ser Leu Ala Phe Glu Cys Ile Leu Ile Asn Gly Lys Tyr Glu Pro
                85                  90                      95
Ser Leu Ser Gln Leu Pro Glu Gly Val Ile Val Cys Gly Ile Asp Glu
            100             105             110
Ala Arg Gly Ser Leu Ser Ser Phe Met Gln Gly Phe Asp Val Asn Lys
        115             120             125
His Pro Leu Ala Phe Leu Asn Ala Val Cys Ser Glu Asp Arg Gly Val
    130             135             140
Val Ile Tyr Ile Pro Glu Glu Met Gln Thr Ser Asp Pro Ile Phe Val
145             150             155             160
Arg His Ile Ser Phe Pro Thr Val Ser Asp His Asp Val Ile Phe Ser
                165             170             175
Pro Arg Ile Val Val Ile Leu Gly Gln Arg Ala Ser Ala Gln Ile Gln
            180             185             190
Ile Ser His Asp Val Asp Leu Glu Met Val Gly Ser Ser Lys Thr Ile
        195             200             205
Val Asn Gly Val Thr Glu Leu Phe Val Gly Glu Gly Ala Asp Leu Thr
    210             215             220
Val Phe Met Val Pro Gly Tyr Ser Glu Glu Asp Thr Leu Ser Trp Ser
225             230             235             240
Thr Ile Ala Thr Val Glu Lys Asp Ala Ile Cys Arg Met Thr Gln Asn
            245             250             255
Leu Leu Glu Ser Cys Gln Gly Phe Gly Trp Phe Asp Asn Thr Ser Tyr
            260             265             270
Ile Val Gly Lys Lys Gly His Ala Glu Ser Leu Val Leu Val Gln Ser
            275             280             285
Pro Arg Lys Thr Trp Val Asn Asn Leu Met Ser His Asp Ala Glu Glu
    290             295             300
Thr Val Ser Arg Gln Asn Ile Lys Ser Ile Leu Tyr Ser Gly His Phe
305             310             315             320
Leu Phe Glu Gly Thr Ile Ser Ile Ser Ser Gln Gly Asp Leu Ser Asp
            325             330             335
Ala Asn Gln Lys His Asp Thr Leu Leu Leu Ser Ser Glu Ala Arg Val
            340             345             350
Ser Thr Phe Pro Arg Leu Glu Ile Glu Thr Asp Glu Val Lys Ala Ser
        355             360             365
His Gly Ala Thr Val Gly Pro Leu Asp Pro Gln Gln Ile Phe Tyr Met
    370             375             380
Arg Ser Arg Gly Met Thr Glu Ala Glu Ala Gln Glu Lys Leu Ile His
385             390             395             400
Gly Phe Leu Lys Gln Gly Leu Val Ser Asp Thr Phe Leu Gly Ser Ser
            405             410             415
Phe Gln Leu Asn Gln Thr Ser
            420

        <210> 693
        <211> 261
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 693
Arg Gly Leu Gly Ser Met Leu Lys Ile Lys His Leu His Ala Ser Cys
1               5               10                      15
Asn Asp Val Lys Ile Leu Asp Asp Phe Asn Leu Asn Ile Gln Pro Gly
            20              25                      30
Thr Met His Val Ile Met Gly Pro Asn Gly Ala Gly Lys Ser Thr Leu
        35              40                      45
Ala Lys Ile Leu Ala Gly Asp Glu Ser Val Leu Val Ser Ser Gly Glu
    50              55                      60
```

```
Ile Ala Leu Gln Glu Gln Asn Leu Leu Ser Met Leu Pro Glu Glu Arg
65                  70                  75                  80
Ser Arg Ala Gly Leu Phe Val Gly Phe Gln Met Pro Pro Glu Ile Pro
                85                  90                  95
Gly Val Asn Asn Lys Met Phe Leu Arg Asp Ala Tyr Asn Ala Arg Arg
            100                 105                 110
Arg Ala Asn Gln Glu Gly Asp Ile Ser Ile Asp Glu Phe Asn Thr Leu
            115                 120                 125
Leu Ser Thr Val Leu Glu Thr Tyr Glu Tyr Asn Ala Thr Thr Asp Leu
    130                 135                 140
Phe Leu Asp Arg Asn Val Asn Glu Gly Phe Ser Gly Gly Glu Arg Lys
145                 150                 155                 160
Arg Asn Glu Ile Cys Gln Met Leu Val Leu Glu Pro Glu Met Val Leu
                165                 170                 175
Leu Asp Glu Pro Asp Ser Gly Leu Asp Val Asp Ala Leu Arg Leu Ile
            180                 185                 190
Cys Arg Val Leu Glu Lys Tyr Arg Glu Leu His Pro Thr Ser Ser Leu
        195                 200                 205
Cys Ile Val Thr His Asn Pro Lys Leu Gly Asn Leu Ile Arg Pro Asp
    210                 215                 220
Val Val His Leu Leu Leu Asp Gly Arg Val Ala Leu Ser Gly Asp Val
225                 230                 235                 240
Ser Leu Met His Glu Leu Glu Ala Lys Ser Tyr Gln Glu Val Thr Lys
                245                 250                 255
Arg Val Ala Trp Arg
                260


        <210> 694
        <211> 495
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 694
Ile Gln Glu Phe Cys Ala Thr Gly Leu Lys Val Met Gly Glu Ser Val
1               5                   10                  15
Lys Val Phe Leu Glu Glu Arg Glu Asp Tyr Pro Tyr Gly Phe Val Thr
                20                  25                  30
Pro Ile Glu Ser Gln Gly Leu Thr Arg Gly Leu Ser Glu Glu Thr Ile
        35                  40                  45
Glu Glu Ile Ala Ala Leu Arg Asn Glu Pro Gln Phe Ile Ile Asp Phe
    50                  55                  60
Arg Leu Gln Ala Tyr Arg Tyr Trp Lys Gln Leu His Glu Pro Ala Trp
65                  70                  75                  80
Ala Arg Leu His Tyr Gly Pro Ile Ala Tyr Asp Asp Ile Val Tyr Phe
                85                  90                  95
Ser Ser Pro Lys Gln Lys Lys Pro Leu Gly Arg Leu Glu Asp Ala Asp
            100                 105                 110
Pro Glu Ile Leu Asp Thr Phe Lys Lys Leu Gly Ile Pro Leu Asp Glu
            115                 120                 125
Gln Lys Arg Leu Leu Asn Val Glu Asn Val Ala Val Asp Leu Val Phe
    130                 135                 140
Asp Ser Val Ser Ile Gly Thr Thr Phe Lys Glu Ala Leu Glu Lys Ala
145                 150                 155                 160
Gly Val Ile Phe Cys Ser Leu Gly Glu Ala Ile Gln Glu His Pro Asn
                165                 170                 175
Leu Val Lys Lys Tyr Leu Gly Ser Val Val Ser His Arg Asp Asn Phe
            180                 185                 190
Phe Ala Ala Leu Asn Ala Ala Val Phe Ser Asp Gly Ser Phe Val Tyr
        195                 200                 205
Val Pro Lys Gly Val Lys Cys Pro Met Asp Ile Ser Thr Tyr Phe Arg
    210                 215                 220
```

921

```
Ile Asn Asn Lys Glu Ala Gly Gln Phe Glu Arg Thr Leu Ile Val Val
225                 230                 235                 240
Glu Asp Gly Gly Tyr Ala Ser Tyr Leu Glu Gly Cys Thr Ala Pro Ala
                245                 250                 255
Tyr Ser Ser Asn Gln Leu His Ala Ala Val Val Glu Leu Val Ala His
                260                 265                 270
Glu His Ala Val Ile Arg Tyr Ser Thr Val Gln Asn Trp Tyr Ala Gly
            275                 280                 285
Asp Lys Lys Thr Gly Lys Gly Gly Ile Tyr Asn Phe Val Thr Lys Arg
        290                 295                 300
Gly Leu Cys Ala Gly Tyr Arg Ser Lys Ile Ser Trp Ser Gln Val Glu
305                 310                 315                 320
Val Gly Ala Ala Ile Thr Trp Lys Tyr Pro Ser Cys Ile Leu Lys Gly
                325                 330                 335
Asp Glu Ser Val Gly Glu Phe Tyr Ser Val Ala Leu Thr Ser Gly Lys
                340                 345                 350
Met Gln Ala Asp Thr Gly Thr Lys Met Leu His Val Gly Lys Arg Thr
                355                 360                 365
Thr Ser Thr Val Ile Ser Lys Gly Ile Ser Ser Asp Glu Ser Lys Asn
        370                 375                 380
Thr Phe Arg Ser Leu Val Ser Leu Gly Lys Lys Ala Glu His Ser Ser
385                 390                 395                 400
Asn Tyr Thr Gln Cys Asp Ser Met Leu Ile Gly Lys Ala Ser Gly Ala
                405                 410                 415
Tyr Thr Asp Pro Lys Ile Val Val Glu Asn Ser Thr Ser Ser Ile Glu
                420                 425                 430
His Glu Ala Thr Thr Ser Lys Leu Arg Glu Asp Gln Leu Leu Tyr Leu
        435                 440                 445
Arg Ser Arg Gly Leu Ser Pro Glu Glu Ala Val Ser Leu Val Ile His
        450                 455                 460
Gly Phe Cys Arg Glu Ile Ile Glu Gln Leu Pro Leu Glu Phe Ala Gln
465                 470                 475                 480
Glu Ala Ser Lys Leu Leu Leu Ile Lys Leu Glu Asn Ser Val Gly
                485                 490                 495
```

        <210> 695
        <211> 351
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 695

```
Leu Arg Ser Thr Asn His Val Leu Gly Glu Ile Ser Met Glu Glu Ala
1               5                   10                  15
Ala Lys His Leu Ala Lys Glu Phe Leu Cys Ser Gly Ile Asn Leu Phe
            20                  25                  30
Leu Ser Gly Glu Tyr Glu Gln Ala Glu Lys Arg Leu Lys Glu Thr Leu
            35                  40                  45
Glu Leu Asp Ser Thr Ala Ala Leu Ala Tyr Cys Tyr Leu Gly Ile Ile
        50                  55                  60
Ala Leu Glu Thr Gly Arg Val Ser Glu Ala Leu Asn Trp Cys Ser Lys
65                  70                  75                  80
Gly Leu Ala Ser Glu Pro Gly Asp Ser Tyr Leu Arg Tyr Cys Tyr Gly
                85                  90                  95
Val Ala Leu Asp Arg Gly Asn Gln Tyr Glu Ala Ala Ile Glu Gln Tyr
            100                 105                 110
Ser Ala Tyr Val Ala Leu His Pro Asp Asp Val Glu Cys Trp Phe Ser
        115                 120                 125
Leu Gly Ser Val Tyr His Arg Leu Lys Arg Leu Gln Glu Ala Leu Asp
        130                 135                 140
Cys Phe Asp Lys Ile Leu Ala Leu Asp Pro Trp Asn Pro Gln Ser Leu
145                 150                 155                 160
```

```
Tyr Asn Lys Ala Val Ile Leu Ser Glu Met Asp Asp Glu Ala Glu Ser
              165             170             175
Ile Arg Leu Leu Glu Val Ala Val Ala Lys Asn Pro Leu Tyr Trp Lys
              180             185             190
Ala Trp Val Lys Leu Gly Phe Leu Leu Ser Arg Ser Lys Arg Trp Asp
              195             200             205
Lys Ala Thr Glu Ala Tyr Glu Arg Val Val Gln Leu Arg Pro Asp Leu
        210             215             220
Ser Asp Gly His Tyr Asn Leu Gly Leu Cys Tyr Leu Thr Leu Asp Lys
225             230             235             240
Thr Arg Leu Ala Leu Lys Ala Phe Gln Glu Ala Leu Phe Leu Asn Ala
              245             250             255
Glu Asp Ala Asp Ala His Phe Tyr Val Gly Leu Ala His Leu Asp Leu
              260             265             270
Lys Gln Met Arg Glu Ala Tyr Glu Ala Phe Asn Ser Ala Leu Ser Ile
        275             280             285
Asn Leu Glu His Glu Arg Ala His Tyr Leu Leu Gly Tyr Leu His His
        290             295             300
Met Gln Gly Glu Thr Asp Lys Ala Thr Lys Glu Leu Leu Phe Leu Gln
305             310             315             320
Lys Lys Asp Ser Thr Phe Ala Pro Leu Leu Gln Lys Thr Val Val Ser
              325             330             335
Asp Pro Ser Ser Met Gln Phe Glu Arg Arg Leu Asp Thr Ile Ser
              340             345             350

        <210> 696
        <211> 1102
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 696
Phe Ser Asp Glu Ser Glu Ala His Asn Ile His Ser Met Lys Arg Pro
1               5               10              15
Lys Lys Phe Pro Ile Tyr Leu Ser Ile Ala Gln Lys Thr Asn Arg Leu
              20              25              30
Leu Ser Gly Ile Val Ile Ala Phe Ala Val Ile Ala Leu Arg Leu Trp
        35              40              45
Tyr Leu Ala Val Val Glu His Glu Gln Lys Leu Glu Glu Ala Tyr Lys
        50              55              60
Pro Gln Ile Arg Val Leu Pro Gln Tyr Val Glu Arg Ala Thr Ile Cys
65              70              75              80
Asp Arg Phe Gly Lys Thr Leu Ala Val Asn Gln Leu Gln Tyr Asp Val
              85              90              95
Ser Val Ala Tyr Gly Ala Ile Arg Asp Leu Pro Thr Arg Ala Trp Arg
              100             105             110
Val Asp Glu His Gly His Lys Gln Leu Ile Pro Val Arg Lys His Tyr
        115             120             125
Ile Met Cys Leu Ser Glu Leu Leu Ser Gln Glu Leu His Leu Asp Arg
        130             135             140
Glu Ala Ile Glu Asp Ala Ile His Ala Lys Ala Ser Val Leu Gly Ser
145             150             155             160
Val Pro Tyr Leu Val Ala Ala Asn Val Ser Glu Arg Thr Tyr Leu Lys
              165             170             175
Leu Lys Met Leu Ser Lys Asp Trp Pro Gly Leu His Val Glu Ala Val
              180             185             190
Val Arg Arg His Tyr Pro Gln Glu Ser Val Ala Ser Asp Ile Leu Gly
        195             200             205
Tyr Val Gly Pro Ile Ser Leu Gln Glu Tyr Lys Arg Val Thr Gln Glu
        210             215             220
Leu Ser Gln Leu Arg Glu Cys Val Arg Ala Tyr Glu Glu Gly Glu Asp
225             230             235             240
```

923

```
Pro Lys Leu Pro Glu Gly Leu Ala Ser Ile Asp Gln Val Arg Ala Leu
             245              250              255
Leu Glu Ser Val Glu Ser Asn Ala Tyr Ser Leu Asn Ala Leu Val Gly
             260              265              270
Lys Met Gly Val Glu Ala Cys Trp Asp Ser Lys Leu Arg Gly Lys Ile
             275              280              285
Gly Lys Lys Pro Ile Leu Val Asp Arg Arg Gly Asn Phe Ile Gln Glu
             290              295              300
Met Glu Gly Ala Val Pro Glu Ala Pro Gly Thr Lys Leu Gln Leu Thr
305              310              315              320
Leu Ser Ala Glu Leu Gln Ala Tyr Ala Asp Ala Leu Leu Leu Glu Tyr
             325              330              335
Glu Lys Thr Glu Thr Phe Arg Ser Ala Lys Ser Leu Lys Lys Arg Glu
             340              345              350
Lys Leu Pro Pro Leu Phe Pro Trp Ile Lys Gly Gly Ala Ile Ile Ala
             355              360              365
Leu Asp Pro Asn Asn Gly Glu Ile Leu Ala Met Ala Ser Ser Pro Arg
             370              375              380
Tyr Arg Asn Asn Asp Phe Val Asn Ala Lys Val Ala Glu Asp Ser Lys
385              390              395              400
Ala Val Arg Ser Ser Ile Tyr Arg Trp Leu Glu Asn Lys Glu His Ile
             405              410              415
Ala Glu Ile Tyr Asp Arg Lys Val Pro Leu Ile Arg Glu Arg Arg Asn
             420              425              430
Pro Leu Thr Gly Leu Cys Tyr Glu Glu Ile Leu Pro Leu Thr Phe Asp
             435              440              445
Cys Phe Leu Asp Phe Leu Phe Pro Glu Asn Ser Val Ile Lys Leu Gln
450              455              460
Leu Lys Arg Asn Ser Phe Val Gly Gln Ala Ile Glu Val Gln Asn Leu
465              470              475              480
Val Thr Arg Leu Leu Ser Leu Phe Pro Tyr Glu Glu Gly Thr Cys Pro
             485              490              495
Cys Ser Ala Ile Phe Asp Ala Val Phe Pro Asn Glu Glu Gly His Ile
             500              505              510
Leu Ile Gln Glu Val Ile Ser Leu Gln Glu Gln Lys Trp Ile Met Glu
             515              520              525
Cys Leu Asn Gln His Lys Ala Asp Ile Glu Glu Leu Lys Glu Ala Leu
530              535              540
Asp Gln Val Phe Asn Glu Leu Pro Ala Asn Tyr Asp Lys Ile Leu Tyr
545              550              555              560
Thr Asp Ile Leu Arg Leu Ile Val Asp Pro Glu Arg Phe Ser Pro Val
             565              570              575
Leu Pro Ser Glu Val His Arg Leu Ser Leu Ser Glu Phe Thr Glu Leu
             580              585              590
Gln Gly Arg Tyr Val Val Leu Arg Ser Ala Phe Ser Thr Ile Leu Glu
             595              600              605
Asp Ala Phe Ile Glu Val His Phe Lys Ser Trp Arg Lys Ser Glu Phe
610              615              620
Leu Gln Tyr Leu Ala Ala Lys Arg Gln Glu Glu Ala Leu Arg Lys Gln
625              630              635              640
Arg Tyr Pro Thr Pro Tyr Val Asp Tyr Leu Glu Glu Glu Lys Thr Arg
             645              650              655
Gln Tyr Lys Met Phe Cys Gln Glu His Leu Asp Thr Phe Leu Ala Tyr
             660              665              670
Leu Phe Ser Lys Thr Pro Tyr Lys Glu Gly Leu Glu Pro Tyr Tyr Asp
             675              680              685
Ile Leu Asp Leu Trp Ile Asn Glu Leu Asp Asn Gly Ala His Arg Ala
             690              695              700
Leu Ser Trp His Glu His Tyr Leu Phe Leu Lys Glu Arg Val Ser His
705              710              715              720
```

924

```
Leu Ser Glu His Leu Pro Ala Leu Phe Ser Thr Phe Arg Glu Phe Asn
                725             730             735
Glu Leu Gln Arg Pro Leu Leu Gly Lys Tyr Pro Ile Ser Ile Val Arg
                740             745             750
Asn Lys Arg Gln Thr Glu Gln Asp Leu Ala Ala Ser Phe Tyr Pro Val
                755             760             765
Tyr Gly Tyr Gly Tyr Leu Arg Pro His Ala Tyr Gly Gln Ala Ala Thr
    770             775             780
Leu Gly Ser Ile Phe Lys Leu Val Ser Ala Tyr Ser Val Leu Ser Gln
785             790             795             800
Arg Ile Leu Trp Gly His Asn Glu Glu Pro Ala Asn Pro Leu Val Ile
                805             810             815
Ile Asp Lys Asn Ser Phe Gly Tyr Arg Ser Ser Lys Pro His Val Gly
            820             825             830
Phe Phe Lys Asp Gly Thr Pro Ile Pro Thr Phe Phe Arg Gly Gly Ser
        835             840             845
Leu Pro Gly Asn Asp Phe Met Gly Arg Gly Phe Ile Asp Leu Val Ser
    850             855             860
Ala Leu Glu Met Ser Ser Asn Pro Tyr Phe Ser Leu Leu Val Gly Glu
865             870             875             880
Gly Leu Gly Asp Pro Glu Asp Leu Ala Asp Ala Ala Ser Leu Phe Gly
            885             890             895
Phe Gly Glu Lys Thr Gly Leu Gly Leu Pro Gly Glu Tyr Ala Gly Arg
            900             905             910
Val Pro His Asp Leu Ala Tyr Asn Arg Ser Gly Leu Tyr Ala Thr Ala
        915             920             925
Ile Gly Gln His Thr Leu Val Val Thr Pro Leu Gln Thr Ala Val Met
    930             935             940
Leu Ala Ser Leu Val Asn Gly Gly Val Val Tyr Val Pro Lys Leu Leu
945             950             955             960
Leu Gly Glu Trp Glu Gly Glu His Val Ser Tyr Leu Ser Ser Lys Lys
            965             970             975
Lys Arg Thr Ile Phe Met Pro Asp Ala Val Val Glu Val Leu Lys Thr
            980             985             990
Gly Met Arg Asn Val Ile Trp Gly Gln Tyr Gly Thr Ala Arg Ala Ile
    995             1000            1005
Gln Ser Gln Phe Pro Pro Gln Leu Leu Ser Arg Ile Ile Gly Lys Thr
    1010            1015            1020
Ser Thr Ala Glu Ser Ile Met Arg Val Gly Leu Asp Arg Glu Tyr Gly
1025            1030            1035            1040
Thr Met Lys Met Lys Asp Ile Trp Phe Ala Ala Val Gly Phe Ser Asp
                1045            1050            1055
Gln Asp Leu Ser Leu Pro Thr Ile Val Val Ile Val Tyr Leu Arg Leu
        1060            1065            1070
Gly Glu Phe Gly Arg Asp Ala Ala Pro Met Ala Val Lys Met Ile Asp
    1075            1080            1085
Met Trp Glu Lys Ile Gln Gln Arg Glu Ser Phe Leu Arg Gly
    1090            1095            1100

        <210> 697
        <211> 394
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 697
Ser Leu Glu Val Ser Met Lys Lys Leu Leu Lys Ser Ala Leu Leu Ser
1           5           10          15
Ala Ala Phe Ala Gly Ser Val Gly Ser Leu Gln Ala Leu Pro Val Gly
            20          25          30
Asn Pro Ser Asp Pro Ser Leu Leu Ile Asp Gly Thr Ile Trp Glu Gly
    35          40          45
```

925

```
Ala Ala Gly Asp Pro Cys Asp Pro Cys Ala Thr Trp Cys Asp Ala Ile
        50              55              60
Ser Leu Arg Ala Gly Phe Tyr Gly Asp Tyr Val Phe Asp Arg Ile Leu
65              70              75              80
Lys Val Asp Ala Pro Lys Thr Phe Ser Met Gly Ala Lys Pro Thr Gly
                85              90              95
Ser Ala Ala Ala Asn Tyr Thr Thr Ala Val Asp Arg Pro Asn Pro Ala
            100             105             110
Tyr Asn Lys His Leu His Asp Ala Glu Trp Phe Thr Asn Ala Gly Phe
        115             120             125
Ile Ala Leu Asn Ile Trp Asp Arg Phe Asp Val Phe Cys Thr Leu Gly
        130             135             140
Ala Ser Asn Gly Tyr Ile Arg Gly Asn Ser Thr Ala Phe Asn Leu Val
145             150             155             160
Gly Leu Phe Gly Val Lys Gly Thr Thr Val Asn Ala Asn Glu Leu Pro
                165             170             175
Asn Val Ser Leu Ser Asn Gly Val Val Glu Leu Tyr Thr Asp Thr Ser
            180             185             190
Phe Ser Trp Ser Val Gly Ala Arg Gly Ala Leu Trp Glu Cys Gly Cys
            195             200             205
Ala Thr Leu Gly Ala Glu Phe Gln Tyr Ala Gln Ser Lys Pro Lys Val
        210             215             220
Glu Glu Leu Asn Val Ile Cys Asn Val Ser Gln Phe Ser Val Asn Lys
225             230             235             240
Pro Lys Gly Tyr Lys Gly Val Ala Phe Pro Leu Pro Thr Asp Ala Gly
                245             250             255
Val Ala Thr Ala Thr Gly Thr Lys Ser Ala Thr Ile Asn Tyr His Glu
            260             265             270
Trp Gln Val Gly Ala Ser Leu Ser Tyr Arg Leu Asn Ser Leu Val Pro
        275             280             285
Tyr Ile Gly Val Gln Trp Ser Arg Ala Thr Phe Asp Ala Asp Asn Ile
        290             295             300
Arg Ile Ala Gln Pro Lys Leu Pro Thr Ala Val Leu Asn Leu Thr Ala
305             310             315             320
Trp Asn Pro Ser Leu Leu Gly Asn Ala Thr Ala Leu Ser Thr Thr Asp
                325             330             335
Ser Phe Ser Asp Phe Met Gln Ile Val Ser Cys Gln Ile Asn Lys Phe
            340             345             350
Lys Ser Arg Lys Ala Cys Gly Val Thr Val Gly Ala Thr Leu Val Asp
        355             360             365
Ala Asp Lys Trp Ser Leu Thr Ala Glu Ala Arg Leu Ile Asn Glu Arg
        370             375             380
Ala Ala His Val Ser Gly Gln Phe Arg Phe
385             390
```

```
        <210> 698
        <211> 299
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 698
Asn Ser Gly Phe Tyr Val Arg Met Pro Leu Leu Thr Tyr Ser Asn Phe
1               5               10              15
Glu Ile Glu Val Gln Ser Leu Glu Ser Gln Ser Cys Lys Leu Thr Ile
            20              25              30
Lys Asp Leu Met Ser Ala Gly Ala His Phe Gly His Gln Thr Arg Arg
        35              40              45
Trp Asn Pro Lys Met Lys Leu Tyr Ile Phe Glu Glu Lys Asn Gly Leu
        50              55              60
Tyr Ile Ile Asn Leu Ala Lys Thr Leu Gln Gln Leu Arg Asn Ala Leu
65              70              75              80
```

926

Pro His Ile Arg Lys Val Ile Gln Asp Asn Lys Thr Val Leu Phe Val
            85   90   95
Gly Thr Lys Lys Gln Ala Lys Cys Val Ile Arg Glu Ala Ala Ile Glu
            100   105   110
Ala Gly Glu Phe Phe Ile Ala Glu Arg Trp Leu Gly Gly Met Leu Thr
            115   120   125
Asn Met Thr Thr Ile Arg Asn Ser Ile Lys Thr Leu Asp Lys Ile Glu
    130   135   140
Lys Asp Leu Ser Arg Asn Gln Ala Tyr Leu Thr Lys Lys Glu Ala Ala
145   150   155   160
Leu Leu Ala Lys Arg His Gln Lys Leu Leu Arg Asn Leu Glu Gly Ile
                165   170   175
Arg Tyr Met Lys Lys Ala Pro Gly Leu Leu Val Val Val Asp Pro Ser
                180   185   190
Tyr Glu Lys Ile Ala Val Ala Glu Ala Lys Lys Leu Gly Ile Pro Val
            195   200   205
Leu Ala Leu Val Asp Thr Asn Cys Asp Pro Thr Pro Ile Asp His Val
    210   215   220
Ile Pro Cys Asn Asp Asp Ser Leu Lys Ser Ile Arg Leu Ile Ile Asn
225   230   235   240
Val Ile Lys Glu Asn Ile Ile Glu Ala Lys His Lys Leu Gly Ile Glu
                245   250   255
Ile Val Ser Pro Val Lys Ser Leu Glu Val Pro Asp Leu Ser Ala Phe
            260   265   270
Glu Ser Ser Gln Asp Asp Glu Ser Asp Glu Glu Asn Arg Glu Glu Asp
            275   280   285
Leu Leu Ala Lys Lys Phe Asp Gly Glu Ala Asn
    290   295

        <210> 699
        <211> 287
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 699
Trp Arg Gly Lys Leu Met Ser Asp Phe Ser Met Glu Thr Leu Lys Thr
1   5   10   15
Leu Arg Gln Gln Thr Gly Val Gly Leu Thr Lys Cys Lys Glu Ala Leu
            20   25   30
Glu Ala Cys Gly Gly Asn Leu Glu Glu Ala Val Val Tyr Leu Arg Lys
            35   40   45
Leu Gly Leu Ala Ser Ala Gly Lys Lys Glu His Arg Glu Thr Lys Glu
    50   55   60
Gly Ile Ile Ala Ala Lys Thr Asp Ala Asn Gly Thr Ala Leu Ile Glu
65   70   75   80
Val Asn Val Glu Thr Asp Phe Val Ala Asn Asn Ala Val Phe Arg Glu
                85   90   95
Phe Val Ser Asn Leu Leu Asn Asp Ile Leu Lys Tyr Lys Val Asp Thr
            100   105   110
Val Glu Ala Leu Ser Gln Ala Ala Ser Ser Gln Asp Pro Ser Leu Ser
            115   120   125
Val Asp Glu Leu Arg Ala Val Thr Met Gln Thr Val Gly Glu Asn Ile
    130   135   140
Arg Ile Ser Arg Val Ala Tyr Phe Pro Lys Ala Thr Asn Ser Thr Val
145   150   155   160
Gly Ile Tyr Ser His Gly Asn Gly Lys Thr Val Ala Leu Thr Met Leu
                165   170   175
Ser Gly Ser Ser Thr Ala Asp Ser Leu Ala Lys Asp Ile Ala Met His
                180   185   190
Val Val Ala Ala Gln Pro Gln Phe Leu Ser Lys Glu Ser Val Pro Ala
            195   200   205

        927

Glu Ala Ile Ala Lys Glu Lys Glu Val Ile Ala Ser Gln Ile Gln Gly
210   215   220

Lys Pro Gln Glu Val Ile Glu Lys Ile Val Thr Gly Lys Leu Asn Thr
225   230   235   240

Phe Phe Gln Glu Ala Cys Leu Leu Glu Gln Pro Phe Ile Lys Asn Ala
              245   250   255

Asp Leu Ser Ile Gln Ser Leu Ile Asp Asp Phe Ser Lys Thr Ser Gly
              260   265   270

Ser Ser Val Ala Ile Glu Gln Phe Ile Leu Trp Lys Ile Gly Ala
              275   280   285

<210> 700
<211> 253
<212> PRT
<213> Chlamydia pneumoniae

<400> 700
Glu Pro Asn Lys Asn Met Ala Lys Gln Thr Arg Arg Val Leu Phe Lys
1   5   10   15

Ile Ser Gly Glu Ala Leu Ser Lys Asp Ser Ser Asn Arg Ile Asp Glu
              20   25   30

Met Arg Leu Ser Arg Leu Val Ser Glu Leu Arg Ala Val Arg Asn Asn
       35   40   45

Asp Ile Glu Ile Ala Leu Val Ile Gly Gly Gly Asn Ile Leu Arg Gly
       50   55   60

Leu Ala Glu Gln Lys Glu Leu Gln Ile Asn Arg Val Ser Ala Asp Gln
65   70   75   80

Met Gly Met Leu Ala Thr Leu Ile Asn Gly Met Ala Val Ala Asp Ala
              85   90   95

Leu Lys Ala Glu Asp Ile Pro Cys Leu Leu Thr Ser Thr Leu Ser Cys
              100   105   110

Pro Gln Leu Ala Asp Leu Tyr Thr Pro Gln Lys Ser Ile Glu Ala Leu
       115   120   125

Asp Gln Gly Lys Ile Leu Ile Cys Thr Thr Gly Ala Gly Ser Pro Tyr
       130   135   140

Leu Thr Thr Asp Thr Gly Ala Ala Leu Arg Ala Cys Glu Leu Asn Val
145   150   155   160

Asp Val Leu Ile Lys Ala Thr Met His Val Asp Gly Val Tyr Asp Lys
              165   170   175

Asp Pro Arg Leu Phe Pro Asp Ala Val Lys Tyr Asp Phe Val Ser Tyr
              180   185   190

Lys Asp Phe Leu Ser Asn Gln Leu Gly Val Met Asp Ala Ser Ala Ile
       195   200   205

Ser Leu Cys Met Asp Ser His Ile Pro Ile Arg Val Phe Ser Phe Leu
210   215   220

Gln His Ser Leu Glu Lys Ala Leu Phe Asp Pro Thr Ile Gly Thr Leu
225   230   235   240

Val Ser Glu Asp Val Asn His Val Cys Ser Pro Arg His
              245   250

<210> 701
<211> 181
<212> PRT
<213> Chlamydia pneumoniae

<400> 701
Thr Met Ser Val Leu Gln Asp Thr Glu Lys Lys Met Ala Ala Ala Leu
1   5   10   15

Asp Phe Phe His Lys Glu Val Lys Ser Phe Arg Thr Gly Lys Ala His
       20   25   30

928

```
Pro Ala Leu Val Glu Thr Val Val Val Asp Val Tyr Gly Thr Thr Met
        35              40              45
Arg Leu Ser Asp Ile Ala Ser Ile Ser Val Ala Asp Leu Arg Gln Leu
    50              55              60
Val Ile Ser Pro Tyr Asp Gly Asn Asn Ala Ser Ala Ile Ala Lys Gly
65              70              75              80
Ile Ile Ala Ala Asn Leu Asn Leu Gln Pro Glu Val Glu Gly Ser Ile
                85              90              95
Ile Arg Ile Lys Val Pro Glu Pro Thr Ala Asp Tyr Arg Gln Glu Met
                100             105             110
Ile Lys Gln Leu Arg Arg Lys Cys Glu Glu Ala Lys Ile Asn Val Arg
        115             120             125
Asn Ile Arg Arg Glu Ala Asn Asp Lys Leu Lys Lys Asp Ser Ala Leu
    130             135             140
Thr Glu Asp Val Val Lys Gly Asn Glu Lys Lys Ile Gln Glu Leu Thr
145             150             155             160
Asp Lys Phe Cys Lys Gln Leu Asp Glu Leu Thr Lys Gln Lys Glu Ala
            165             170             175
Glu Ile Ala Ser Ile
            180
```

```
        <210> 702
        <211> 172
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 702
Leu Met Val His Ser Pro Thr His Gln Cys Tyr His Cys Gln Gln Pro
1               5               10              15
Ala Thr Ile Cys Tyr Thr Glu Ile Asp Lys Asp Lys Val Ile Arg Ser
            20              25              30
Tyr Val Cys Ala Thr Cys Pro Cys Pro Ser His Tyr Tyr Asn Asn Glu
        35              40              45
His Leu Ser Leu Ser Lys Gly Val Gly Val Leu Thr Leu Glu Cys Gly
    50              55              60
Asn Cys Lys Thr Val Trp His Ser Lys Gln Asp Asp Glu Gln Leu Leu
65              70              75              80
Gly Cys His Gln Cys Tyr Thr Asn Phe Lys Asn Gln Ile Thr Ser Lys
                85              90              95
Leu Lys Ser Glu Arg Val Val Ser Ser Ser Phe Thr Met Glu Lys Gly
            100             105             110
Gln Gly Ser Leu His Ile Gly Arg Ala Pro Gly Glu Ala Ser Asn Thr
        115             120             125
Asn Pro Leu Leu Lys Leu Ile Ala Leu Asn Glu Ala Leu Gln Asp Thr
    130             135             140
Leu Glu Arg Glu Asp Tyr Glu Gln Ala Ala Val Ile Arg Asp Gln Ile
145             150             155             160
Asn His Leu Lys Thr Lys Asn Pro Asp Asp Pro Ser
            165             170
```

```
        <210> 703
        <211> 363
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 703
Lys Pro Lys Ile Gln Met Thr Leu Pro Asn Asp Leu Leu Glu Thr Leu
1               5               10              15
Val Lys Arg Lys Glu Ser Pro Gln Ala Asn Lys Val Trp Pro Val Thr
            20              25              30
```

929

Thr Phe Ser Leu Ala Arg Asn Leu Ser Val Ser Lys Phe Leu Pro Cys
          35   40   45
Leu Ser Lys Glu Gln Lys Leu Glu Ile Leu Gln Phe Ile Thr Ser His
      50   55   60
Phe Asn His Ile Glu Gly Phe Gly Glu Phe Ile Val Leu Pro Leu Lys
65   70   75   80
Asp Thr Pro Leu Trp Gln Lys Glu Phe Leu Leu Glu His Phe Leu Leu
              85   90   95
Pro Tyr Asp Leu Val Gly Asn Pro Glu Gly Glu Ala Leu Val Val Ser
          100   105   110
Arg Ser Gly Asp Phe Leu Ala Ala Ile Asn Phe Gln Asp His Leu Val
          115   120   125
Leu His Gly Ile Asp Phe Gln Gly Asn Val Glu Lys Thr Leu Asp Gln
      130   135   140
Leu Val Gln Leu Asp Ser Tyr Leu His Ser Lys Leu Ser Phe Ala Phe
145   150   155   160
Ser Ser Glu Phe Gly Phe Leu Thr Thr Asn Pro Lys Asn Cys Gly Thr
                  165   170   175
Gly Leu Lys Ser Gln Cys Phe Leu His Ile Pro Ala Leu Leu Tyr Ser
              180   185   190
Lys Glu Phe Thr Asn Leu Ile Asp Glu Glu Val Glu Ile Ile Thr Ser
          195   200   205
Ser Leu Leu Leu Gly Val Thr Gly Phe Pro Gly Asn Ile Val Val Leu
      210   215   220
Ser Asn Arg Cys Ser Leu Gly Leu Thr Glu Glu Leu Leu Leu Ser Ser
225   230   235   240
Leu Arg Ile Thr Ala Ser Lys Leu Ser Val Ala Glu Val Ala Ala Lys
              245   250   255
Lys Arg Leu Ser Glu Glu Asn Ser Gly Asp Leu Lys Asn Leu Ile Leu
          260   265   270
Arg Ser Leu Gly Leu Leu Thr His Ser Cys Gln Leu Glu Leu Lys Glu
      275   280   285
Thr Leu Asp Ala Leu Ser Trp Ile Gln Leu Gly Ile Asp Leu Gly Leu
      290   295   300
Ile Lys Val Thr Glu Asn His Pro Leu Trp Asn Pro Leu Phe Trp Gln
305   310   315   320
Ile Arg Arg Ala His Leu Ala Leu Gln Lys Gln Ala Glu Asp Ser Arg
              325   330   335
Asp Leu Gln Lys Asp Thr Ile Ser His Leu Arg Ala Ser Val Leu Lys
          340   345   350
Glu Leu Thr Lys Gly Leu Ser Pro Glu Ser Phe
      355   360

        <210> 704
        <211> 924
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 704
Leu Lys Lys Asn Pro Val Lys Thr Val Ile Leu Asn Ile Gly Arg Lys
1   5   10   15
Ile Leu Gln Gly Ile Lys Lys Lys Lys Lys Ile Gly Ile Leu Ser
              20   25   30
Gly Leu Phe Phe Leu Asp Leu Val Leu Leu Gly Val Ser Ser Gln Arg
          35   40   45
Pro Thr Glu Thr Ser Ala Asn Val Lys His Asn Leu Arg Asp Glu Lys
      50   55   60
Leu Ala Ala Cys Pro Lys Asn Ser Ala Ala Ser Leu Ser Ala Lys Lys
65   70   75   80
Ser His Thr Lys Lys Thr Thr Pro Gly Ser Ile Pro Ser Lys Val Phe
              85   90   95

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Ser Lys Phe Asp Ala Thr Gln Asp Lys Thr Phe Gln Lys Thr Ser Gly
            100                 105                 110
Ser Ala Phe Pro Ala Lys Pro Thr Thr Leu Lys Glu Leu Glu Glu Arg
            115                 120                 125
Lys Lys Pro Arg Pro Glu Arg Arg Thr Thr Ala Asp Val Lys Arg Ser
    130                 135                 140
Pro Arg Phe Leu Pro Thr Gln Glu Val Glu Glu Pro Val Pro Ala Ala
145                 150                 155                 160
Ser Lys Glu Gln Leu Asp Ser Ile Gln Val Trp Glu Glu Lys Gln Asn
            165                 170                 175
Tyr Ala Arg Arg Ala Val Asn Ala Ile Asn Leu Ser Ile Lys Lys Gln
            180                 185                 190
Leu Glu Glu Gln Thr Ser Thr Val Thr Glu Lys Asp Val Gln Pro Lys
            195                 200                 205
Thr Gln Ala Thr Pro His Ala Ser Lys Lys Asn Val Ala Ser Pro Ser
    210                 215                 220
Thr Ser Met Pro Gly Ile Glu Lys Ala Ala Thr Thr Val Ala Val Pro
225                 230                 235                 240
Gln Asp Lys Ser Glu Glu Glu Lys Val Lys Glu Arg Leu Thr Lys Arg
            245                 250                 255
Glu Leu Thr Cys Glu Asp Leu Lys Asp Asn Gly Tyr Thr Val Asn Phe
            260                 265                 270
Glu Asp Ile Ser Ile Leu Glu Leu Leu Gln Phe Val Ser Lys Ile Ser
            275                 280                 285
Gly Thr Asn Phe Val Phe Asp Ser Asn Asp Leu Gln Phe Asn Val Thr
            290                 295                 300
Ile Val Ser His Asp Pro Thr Ser Val Asp Asp Leu Ser Thr Ile Leu
305                 310                 315                 320
Leu Gln Val Leu Lys Met His Asp Leu Lys Val Val Glu Gln Gly Asn
            325                 330                 335
Asn Val Leu Ile Tyr Arg Asn Pro His Leu Ser Lys Leu Ser Thr Val
            340                 345                 350
Val Thr Asp Ser Ser Leu Lys Glu Thr Cys Glu Ala Val Val Val Thr
            355                 360                 365
Arg Val Phe Arg Leu Tyr Ser Val Ser Pro Ser Ala Ala Val Asn Ile
    370                 375                 380
Ile Gln Pro Leu Leu Ser His Asp Ala Ile Val Ser Ala Ser Glu Ala
385                 390                 395                 400
Thr Arg His Val Ile Ile Ser Asp Ile Ala Gly Asn Val Asp Lys Val
            405                 410                 415
Ser Asp Leu Leu Ala Ala Leu Asp Cys Pro Gly Thr Ser Val Asp Met
            420                 425                 430
Thr Glu Tyr Glu Val Lys Tyr Ala Asn Pro Ala Ala Leu Val Ser Tyr
    435                 440                 445
Cys Gln Asp Val Leu Gly Thr Leu Ala Glu Asp Asp Ala Phe Gln Met
    450                 455                 460
Phe Ile Gln Pro Gly Thr Asn Lys Ile Phe Val Val Ser Ser Pro Arg
465                 470                 475                 480
Leu Ala Asn Lys Ala Glu Gln Leu Leu Lys Ser Leu Asp Val Pro Glu
            485                 490                 495
Met Ala His Thr Leu Asp Asp Pro Ala Ser Thr Ala Leu Ala Leu Gly
            500                 505                 510
Gly Thr Gly Thr Thr Ser Pro Lys Ser Leu Arg Phe Phe Met Tyr Lys
    515                 520                 525
Leu Lys Tyr Gln Asn Gly Glu Val Ile Ala Asn Ala Leu Gln Asp Ile
    530                 535                 540
Gly Tyr Asn Leu Tyr Val Thr Thr Ala Met Asp Glu Asp Phe Ile Asn
545                 550                 555                 560
Thr Leu Asn Ser Ile Gln Trp Leu Glu Val Asn Asn Ser Ile Val Ile
            565                 570                 575
```

Ile Gly Asn Gln Gly Asn Val Asp Arg Val Ile Gly Leu Leu Asn Gly
                580   585   590
Leu Asp Leu Pro Pro Lys Gln Val Tyr Ile Glu Val Leu Ile Leu Asp
                595   600   605
Thr Ser Leu Glu Lys Ser Trp Asp Phe Gly Val Gln Trp Val Ala Leu
                610   615   620
Gly Asp Glu Gln Ser Lys Val Ala Tyr Ala Ser Gly Leu Leu Asn Asn
625   630   635   640
Thr Gly Ile Ala Thr Pro Thr Lys Ala Thr Val Pro Pro Gly Thr Pro
                645   650   655
Asn Pro Gly Ser Ile Pro Leu Pro Thr Pro Gly Gln Leu Thr Gly Phe
                660   665   670
Ser Asp Met Leu Asn Ser Ser Ser Ala Phe Gly Leu Gly Ile Ile Gly
                675   680   685
Asn Val Leu Ser His Lys Gly Lys Ser Phe Leu Thr Leu Gly Gly Leu
                690   695   700
Leu Ser Ala Leu Asp Gln Asp Gly Asp Thr Val Ile Val Leu Asn Pro
705   710   715   720
Arg Ile Met Ala Gln Asp Thr Gln Gln Ala Ser Phe Phe Val Gly Gln
                725   730   735
Thr Val Pro Tyr Gln Thr Thr Asn Thr Ile Ile Gln Glu Thr Gly Thr
                740   745   750
Val Thr Gln Asn Ile Asp Tyr Glu Asp Ile Gly Val Asn Leu Val Val
                755   760   765
Thr Ser Thr Val Ala Pro Asn Asn Val Val Thr Leu Gln Ile Glu Gln
770   775   780
Thr Ile Ser Glu Leu His Ser Ala Ser Gly Ser Leu Thr Pro Val Thr
785   790   795   800
Asp Lys Thr Tyr Ala Ala Thr Arg Leu Gln Ile Pro Asp Gly Cys Phe
                805   810   815
Leu Val Met Ser Gly His Ile Arg Asp Lys Thr Thr Lys Val Val Ser
                820   825   830
Gly Val Pro Leu Leu Asn Ser Ile Pro Leu Ile Arg Gly Leu Phe Ser
                835   840   845
Arg Thr Ile Asp Gln Arg Gln Lys Arg Asn Ile Met Met Phe Ile Lys
850   855   860
Pro Lys Val Ile Ser Ser Phe Glu Glu Gly Thr Arg Val Thr Asn Lys
865   870   875   880
Glu Gly Tyr Arg Tyr Asn Trp Glu Ala Asp Glu Gly Ser Met Gln Val
                885   890   895
Ala Pro Arg His Ala Pro Glu Cys Gln Gly Pro Pro Ser Leu Gln Ala
                900   905   910
Glu Ser Asp Phe Lys Ile Ile Glu Ile Glu Ala Gln
                915   920

        <210> 705
        <211> 507
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 705
Arg Lys Ile Gly Phe Met Asp Cys Arg Gly Gly Ile Pro Leu Pro Glu
 1   5   10   15
Pro Gln Val Ile Gly Gly Tyr His Val Lys Lys Ile Leu Ser Lys Lys
                20   25   30
Leu Arg Ser Arg Val Val His Gly Leu His Pro Glu Thr Arg His Ser
                35   40   45
Thr Val Ile Lys Val Phe Ser Pro Ser Pro Ser Phe Thr Ser Arg Ser
                50   55   60
Val Tyr Asn Phe Leu Lys Glu Ala Gln Ser Leu His Gln Ile Thr His
65   70   75   80

932

Pro Asn Ile Val Lys Phe His Arg Tyr Gly Lys Trp Gln Asp Cys Leu
                85   90   95
Tyr Ile Ala Met Glu Tyr Ile Glu Gly Ile Ser Leu Arg Glu Tyr Ile
                100   105   110
Leu Ala Gln Phe Ile Ser Leu Pro Gln Ala Ile Asp Ile Ile Phe Asp
                115   120   125
Ile Ala Gln Ala Leu Glu His Leu His Ser Arg Asn Ile Leu His Lys
                130   135   140
Asp Ile Lys Pro Glu Asn Ile Leu Ile Thr Pro Gln Gly Lys Ile Lys
145   150   155   160
Leu Ile Asp Phe Gly Leu Ala Asp Trp Asp Thr Glu Ile Gln Arg Ala
                165   170   175
His Pro Ser Val Ile Gly Thr Pro Tyr Tyr Met Ser Pro Glu Gln Arg
                180   185   190
Gln Gly Glu Ser His Ser Pro Ala Ser Asp Ile Tyr Ala Leu Gly Leu
                195   200   205
Leu Ala Tyr Glu Leu Ile Leu Gly His Leu Ser Leu Gly Arg Val Phe
                210   215   220
Leu Ser Leu Val Pro Glu Arg Ile Ser Lys Ile Leu Ala Lys Ala Leu
225   230   235   240
Gln Pro Ser Pro Asn Asn Arg Tyr Ser Ser Thr Arg Glu Phe Ile Gln
                245   250   255
Asp Ile His His Tyr Arg Met Ser Gly Asp Met Gln Glu Asp Leu Arg
                260   265   270
Ile Lys Asp His Thr Val Ala Leu Tyr Glu Gln Leu Gln Thr Gln Arg
                275   280   285
Phe Trp Leu Ala Pro Glu Thr Leu Arg Phe Pro Asp Phe Ile Ser Gly
                290   295   300
Val Leu Tyr His Gln Gly Tyr Pro Leu Tyr Pro His Ala Tyr Asp Thr
305   310   315   320
Leu Leu Glu Gly Asp Val Phe Asn Leu Trp Leu Gly Tyr Ser Pro Ile
                325   330   335
Ser Asn Ala Thr Ile Ala Leu Ser Val Val Lys Ser Leu Val Cys Gln
                340   345   350
Gln Asp Leu Gln Arg Pro Leu Leu Asp Arg Val Cys Glu Ile Asn Glu
                355   360   365
Cys Leu Ile Arg Met Lys Ile Pro Ile Asp Glu Met Gly Ile Ser Ile
                370   375   380
Leu Cys Leu Glu Ile Ser Lys Glu Asn Lys Glu Leu Ser Trp Ile Ala
385   390   395   400
Cys Gly Lys Thr Val Phe Trp Ile Lys Arg Gln Gly Arg Val Val Gln
                405   410   415
Asp Phe Glu Ser Phe Ser Pro Gly Leu Gly Lys Ile Thr Ser Leu Gln
                420   425   430
Ile Arg Glu Thr Lys Val Ala Trp Glu Ile Gly Asp Glu Ala Val Val
                435   440   445
Cys Thr Leu Glu Leu Glu Glu Ser Val Ala Ser Leu Lys Thr Leu Ser
                450   455   460
Leu Ala Glu Leu Gln Asp Arg Arg Gln Lys Ala Ile Phe Cys Pro Ile
465   470   475   480
Glu Ser Ile His Gly Gly Ile Gln Ser Arg Gln His Gly Ser Asn Ser
                485   490   495
Pro Ser Thr Leu Ile Ser Leu Lys Arg Ile Arg
                500   505

        <210> 706
        <211> 374
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 706

```
Arg Tyr Phe Met Ala Val Ala Ala Asp Ser Ser Ala Ser Trp Leu Lys
1               5                   10                  15
Ser Arg Asn Asn Phe Leu Ser Ser Leu Gly Lys Thr Glu Glu Gln Val
            20                  25                  30
Ala Ala Pro Glu Phe Pro Lys Glu Leu Cys Gln His Lys Ile Arg Glu
        35                  40                  45
Lys Phe Arg Leu Glu Asp Val Gln Val Ser Ile Lys Phe Arg Gly Ser
    50                  55                  60
Ile Thr Ala Val Glu Ala Thr Lys Glu Phe Gly Val His Leu Leu Ile
65                  70                  75                  80
Gln Pro Met Val Val Gln Pro Trp Glu Val Glu Asn Leu Leu Phe Leu
                85                  90                  95
Thr Ser Glu Glu Asp Leu Gln Glu Leu Met Val Ala Val Phe Asp Asp
            100                 105                 110
Ala Ser Leu Ala Ser Tyr Phe Tyr Glu Lys Asp Lys Leu Leu Gly Phe
            115                 120                 125
His Tyr Tyr Phe Val Ala Glu Ala Cys Lys Leu Phe Glu Glu Leu Gln
    130                 135                 140
Trp Val Pro Ser Leu Ser Ala Lys Val Gly Gly Asp Ala Ile Phe Thr
145                 150                 155                 160
Ala Thr Ser Leu Gln Gly Ser Phe Gln Val Val Asp Ile Ser Leu Arg
                165                 170                 175
Leu Asp Gly Lys Asn Val Arg Cys Arg Leu Leu Leu Pro Glu Asp Thr
            180                 185                 190
Phe Gln Ser Cys Gln Lys Phe Phe Ser Gly Leu His Asp Glu Ser Asp
            195                 200                 205
Leu His Asn Ile Asp Gln Thr Gln Gln Ile Ser Leu Ser Val Glu Val
    210                 215                 220
Gly Tyr Ser Gln Leu Thr Gln Glu Glu Trp His Gln Val Val Pro Gly
225                 230                 235                 240
Ser Phe Ile Met Leu Asp Ser Cys Leu Tyr Asp Pro Glu Thr Glu Glu
                245                 250                 255
Ser Gly Ala Leu Leu Thr Val Gln Lys His Gln Phe Phe Gly Gly Arg
            260                 265                 270
Phe Leu Thr Pro Ser Ser Gly Glu Phe Lys Ile Thr Ser Tyr Pro Asn
    275                 280                 285
Leu Thr His Glu Asp Pro Pro Leu Pro Glu Asn Pro Gln Ala Ser Ala
    290                 295                 300
Ala Pro Leu Pro Gly Tyr Ser Arg Leu Val Val Glu Val Ala Arg Tyr
305                 310                 315                 320
Ser Leu Ala Val Ser Glu Phe Ile Lys Leu Asn Leu Gly Ser Ile Leu
                325                 330                 335
Ser Leu Gly Asn His Pro Ala Tyr Gly Val Asp Ile Ile Leu Asp Gly
            340                 345                 350
Ala Lys Val Gly Arg Gly Glu Ile Ile Ala Leu Gly Asp Val Leu Gly
            355                 360                 365
Ile Arg Val Leu Glu Val
370
```

<210> 707
<211> 281
<212> PRT
<213> Chlamydia pneumoniae

<400> 707

```
Phe Met Glu Leu Lys Lys Thr Ala Glu Ser Leu Tyr Ser Ala Lys Thr
1               5                   10                  15
Asp Asn His Thr Val Tyr Gln Asn Ser Pro Glu Pro Arg Asp Ser Arg
            20                  25                  30
```

934

```
Asp Val Lys Val Phe Ser Leu Glu Gly Lys Gln Thr Arg Gln Glu Lys
        35                  40                  45
Thr Thr Ser Ser Lys Gly Asn Thr Arg Thr Glu Ser Arg Lys Phe Ala
    50                  55                  60
Asp Glu Glu Lys Arg Val Asp Asp Glu Ile Ala Glu Val Gly Ser Lys
65                  70                  75                  80
Glu Glu Glu Gln Glu Ser Gln Glu Phe Cys Leu Ala Glu Asn Ala Phe
                85                  90                  95
Ala Gly Met Ser Leu Ile Asp Ile Ala Ala Ala Gly Ser Ala Glu Ala
                100                 105                 110
Val Val Glu Val Ala Pro Ile Ala Val Ser Ser Ile Asp Thr Gln Trp
            115                 120                 125
Ile Glu Asn Ile Ile Leu Ser Thr Val Glu Ser Met Val Ile Ser Glu
        130                 135                 140
Ile Asn Gly Glu Gln Leu Val Glu Leu Val Leu Asp Ala Ser Ser Ser
145                 150                 155                 160
Val Pro Glu Ala Phe Val Gly Ala Asn Leu Thr Leu Val Gln Ser Gly
                165                 170                 175
Gln Asp Leu Ser Val Lys Phe Ser Ser Phe Val Asp Ala Thr Gln Met
            180                 185                 190
Ala Glu Ala Ala Asp Leu Val Thr Asn Asn Pro Ser Gln Leu Ser Ser
        195                 200                 205
Leu Val Ser Ala Leu Lys Gly His Gln Leu Thr Leu Lys Glu Phe Ser
    210                 215                 220
Val Gly Asn Leu Leu Val Gln Leu Pro Lys Ile Glu Glu Val Gln Thr
225                 230                 235                 240
Pro Leu His Met Ile Ala Ser Thr Ile Arg His Arg Glu Glu Lys Asp
                245                 250                 255
Gln Arg Asp Gln Asn Gln Lys Gln Lys Gln Asp Asp Lys Glu Gln Asp
                260                 265                 270
Ser Tyr Lys Ile Glu Glu Ala Arg Leu
        275                 280


        <210> 708
        <211> 170
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 708
Tyr Ala Val Ala Lys Tyr Pro Leu Glu Pro Val Leu Ala Ile Lys Lys
1                5                  10                  15
Asp Arg Val Asp Arg Ala Glu Lys Val Val Lys Glu Lys Arg Arg Leu
        20                  25                  30
Leu Glu Ile Glu Gln Glu Lys Leu Arg Glu Lys Glu Ala Glu Arg Asp
        35                  40                  45
Lys Val Lys Asn His Tyr Met Gln Lys Ile Gln Gln Leu Arg Asp Leu
    50                  55                  60
Leu Asp Glu Gly Thr Thr Ser Asp Ala Val Leu Gln Ile Lys Ser Tyr
65                  70                  75                  80
Ile Lys Val Val Ala Val Gln Leu Ser Glu Glu Glu Lys Val Asn
                85                  90                  95
Lys Gln Lys Glu Val Val Leu Ala Ala Ser Lys Glu Leu Glu Lys Ala
            100                 105                 110
Glu Val Asn Leu Ala Lys Arg Arg Lys Glu Glu Glu Lys Thr Arg Leu
            115                 120                 125
His Lys Glu Glu Trp Met Lys Glu Ala Leu Lys Glu Glu Ala Arg Ala
    130                 135                 140
Glu Glu Lys Glu Gln Asp Glu Met Gly Gln Leu Leu Phe Gln Leu Arg
145                 150                 155                 160
Gln Lys Lys Lys Arg Glu Ser Gly Gly Ser
            165                 170
```

935

<210> 709
<211> 444
<212> PRT
<213> Chlamydia pneumoniae

<400> 709

```
Val Asn Met Asp Gln Leu Thr Thr Asp Phe Asp Thr Leu Met Ser Gln
1               5                   10                  15
Leu Gly Asp Val Asn Leu Thr Thr Val Val Gly Arg Ile Thr Glu Val
            20                  25                  30
Val Gly Met Leu Ile Lys Ala Val Val Pro Asn Val Arg Val Gly Glu
        35                  40                  45
Val Cys Leu Val Lys Arg Asn Gly Met Glu Pro Leu Val Thr Glu Val
    50                  55                  60
Val Gly Phe Thr Gln Ser Phe Ala Phe Leu Ser Pro Leu Gly Glu Leu
65                  70                  75                  80
Ser Gly Val Ser Pro Ser Ser Glu Val Ile Pro Thr Gly Leu Pro Leu
                85                  90                  95
His Ile Arg Ala Gly Asn Gly Leu Leu Gly Arg Val Leu Asn Gly Leu
            100                 105                 110
Gly Glu Pro Ile Asp Val Glu Thr Lys Gly Pro Leu Gln Asn Val Asp
        115                 120                 125
Gln Thr Phe Pro Ile Phe Arg Ala Pro Pro Asp Pro Leu His Arg Ala
    130                 135                 140
Lys Leu Arg Gln Ile Leu Ser Thr Gly Val Arg Cys Ile Asp Gly Met
145                 150                 155                 160
Leu Thr Val Ala Arg Gly Gln Arg Ile Gly Ile Phe Ala Gly Ala Gly
                165                 170                 175
Val Gly Lys Ser Ser Leu Leu Gly Met Ile Ala Arg Asn Ala Glu Glu
            180                 185                 190
Ala Asp Val Asn Val Ile Ala Leu Ile Gly Glu Arg Gly Arg Glu Val
        195                 200                 205
Arg Glu Phe Ile Glu Gly Asp Leu Gly Glu Glu Gly Met Lys Arg Ser
    210                 215                 220
Val Ile Val Val Ser Thr Ser Asp Gln Ser Ser Gln Leu Arg Leu Asn
225                 230                 235                 240
Ala Ala Tyr Val Gly Thr Ala Ile Ala Glu Tyr Phe Arg Asp Gln Gly
                245                 250                 255
Lys Thr Val Val Leu Met Met Asp Ser Val Thr Arg Phe Ala Arg Ala
            260                 265                 270
Leu Arg Glu Val Gly Leu Ala Ala Gly Glu Pro Pro Ala Arg Ala Gly
        275                 280                 285
Tyr Thr Pro Ser Val Phe Ser Thr Leu Pro Arg Leu Leu Glu Arg Ser
    290                 295                 300
Gly Ala Ser Asp Lys Gly Thr Ile Thr Ala Phe Tyr Thr Val Leu Val
305                 310                 315                 320
Ala Gly Asp Asp Met Asn Glu Pro Val Ala Asp Glu Val Lys Ser Ile
                325                 330                 335
Leu Asp Gly His Ile Val Leu Ser Asn Ala Leu Ala Gln Ala Tyr His
            340                 345                 350
Tyr Pro Ala Ile Asp Val Leu Ala Ser Ile Ser Arg Leu Leu Thr Ala
        355                 360                 365
Ile Val Pro Glu Glu Gln Arg Arg Ile Ile Gly Lys Ala Arg Glu Val
    370                 375                 380
Leu Ala Lys Tyr Lys Ala Asn Glu Met Leu Ile Arg Ile Gly Glu Tyr
385                 390                 395                 400
Arg Arg Gly Ser Asp Arg Glu Ile Asp Phe Ala Ile Asp His Ile Asp
                405                 410                 415
Lys Leu Asn Arg Phe Leu Lys Gln Asp Ile His Glu Lys Thr Asn Tyr
            420                 425                 430
```

936

```
Glu Glu Ala Ala Gln Gln Leu Arg Ala Ile Phe Arg
    435                     440


    <210> 710
    <211> 235
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 710
Ala Phe Lys Thr Val Lys Arg Phe Phe Cys Phe Met Ile Asp Pro Val
1               5                   10                  15
Glu Cys Phe Pro Asn Leu Asp Gly Asp Ala Glu Ala Gln Ser Ile Thr
            20                  25                  30
Gln Asn Ser Gly Thr Pro Leu Ala Ser Glu Leu Lys Lys Asp Ile Ser
        35                  40                  45
Pro Phe Ala Leu Gly Ser Tyr Ala Ala Pro Lys Asp Thr Thr Leu Val
    50                  55                  60
Gln Gly Phe Lys Pro Asn Pro Met Ala Met Met Gln Asp Gln Asn Ser
65                  70                  75                  80
Asn Leu Ile Asp Pro Glu Leu Gln Glu Ala Leu Glu Ser Glu Glu Leu
            85                  90                  95
Gln Glu Gln Ile Asn Asn Leu Lys Gly Arg Leu Trp Asp Phe Arg Ser
            100                 105                 110
Thr Phe Glu Asp Ser Gln Thr Thr Ala Gln Phe Ala Asp Glu His Phe
        115                 120                 125
Gln Ala Val Gly Val Ile Ile Asp Leu Ile Asn Glu Asp Leu Asn Thr
    130                 135                 140
Ile Ala Glu His Thr Gln Gln Asp Ala Arg Lys Glu Asp Lys Glu Glu
145                 150                 155                 160
Gly Ser Val Thr Arg Lys Ile Ile Asp Trp Val Ser Ser Gly Glu Glu
            165                 170                 175
Val Leu Asn Arg Ala Leu Leu Tyr Phe Ser Asp Arg Asp Gly Asn Arg
        180                 185                 190
Glu Ser Leu Ala Asn Phe Leu Lys Val Gln Tyr Ala Val Gln Arg Ala
    195                 200                 205
Thr Gln Arg Ala Glu Leu Phe Ala Ser Ile Val Gly Thr Ser Val Ser
    210                 215                 220
Ser Val Lys Thr Ile Met Thr Thr Gln Leu Gly
225                 230                 235


    <210> 711
    <211> 154
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 711
Tyr Lys Arg Glu Ile Met Ala Asp Leu Glu Val Phe Gln Ala Asp Phe
1               5                   10                  15
Ala Leu Leu Phe Glu Ala Gly Leu Leu Ala Ile Lys Gln Gly Asp Glu
            20                  25                  30
Asp Ser Ala Arg Lys Leu Phe Gln Ser Leu His Ile Leu Asn Pro Asn
        35                  40                  45
His Tyr Gly His Asp Leu Gly Leu Ala Leu Ile Ser Leu His Lys Met
    50                  55                  60
Asp Leu Phe Asp Ala Glu Glu Arg Leu Ser Ala Leu Ile Lys Gly Asn
65                  70                  75                  80
Glu Asp Asn Trp Ser Ile Lys Ala Phe Leu Ser Leu Thr His Met Leu
            85                  90                  95
Ile Val Leu His Gln Gly Ser Ser Phe Glu Val Arg Arg Glu Ser Leu
            100                 105                 110
```

Glu Ser Cys Leu Lys Phe Ala Asp Gln Val Ile Ala Asn Cys Lys Ile
    115   120   125
Glu Ser Thr Arg Ala Leu Ala Gln Ser Val Leu Asp Trp His Asp Thr
    130   135   140
Leu Val Ala Lys Ser Ala Gly Pro Leu Gly
145   150

```
        <210> 712
        <211> 91
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 712
```

Arg Ser Arg Gly Glu Lys Ser Met Ala Thr Asn Lys Ser Cys Thr Ala
1   5   10   15
Phe Asp Phe Asn Lys Met Leu Asp Gly Val Cys Thr Tyr Val Lys Gly
            20   25   30
Val Gln Gln Tyr Leu Thr Glu Leu Glu Thr Ser Thr Gln Gly Thr Val
        35   40   45
Asp Leu Gly Thr Met Phe Asn Leu Gln Phe Arg Met Gln Ile Leu Ser
    50   55   60
Gln Tyr Met Glu Ser Val Ser Asn Ile Leu Thr Ala Val Asn Thr Glu
65   70   75   80
Met Ile Thr Met Ala Arg Ala Val Lys Gly Ser
                85   90

```
        <210> 713
        <211> 102
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 713
```

Thr Thr Ile Asn Asn Gln Val Leu Gly Phe Ile Asn Tyr Leu Tyr Leu
1   5   10   15
Gly Arg Tyr Ser Met Phe Asn Met Glu Asn Thr Ala Lys Glu Glu Lys
            20   25   30
Asn Ser Gln Pro Leu Leu Asp Leu Glu Gln Asp Met Gln Asp His Asp
        35   40   45
Arg Ala Gln Glu Leu Lys Ala Ser Val Gln Asp Lys Val His Lys Leu
    50   55   60
His Ala Leu Leu Arg Glu Gly Ser Asp Lys Glu Ser Phe Gly Gln Gln
65   70   75   80
Gln Ser Leu Leu Ala Gly Tyr Val Ala Leu Gln Lys Val Leu Gly Arg
                85   90   95
Ile Asn Arg Lys Met Ile
            100

```
        <210> 714
        <211> 845
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 714
```

Met Ala Val Arg Leu Ile Val Asp Glu Gly Pro Leu Ser Gly Val Ile
1   5   10   15
Phe Val Leu Glu Asp Gly Ile Ser Trp Ser Ile Gly Arg Asp Ser Ser
            20   25   30
Ala Asn Asp Ile Pro Ile Glu Asp Pro Lys Leu Gly Ala Ser Gln Ala
        35   40   45
Ile Ile Asn Lys Thr Asp Gly Ser Tyr Tyr Ile Thr Asn Leu Asp Asp
    50   55   60

```
Thr Ile Pro Ile Val Val Asn Gly Val Ala Ile Gln Glu Thr Thr Gln
65                  70                  75              80
Leu Lys Asn Glu Asp Thr Ile Leu Leu Gly Ser Asn Gln Tyr Ser Phe
                85              90              95
Leu Ser Asp Glu Phe Asp Pro Gln Asp Leu Val Tyr Asp Phe Asp Ile
            100             105             110
Pro Glu Glu Asn Phe Ser Asn Asp Ser Gly Asp Leu Ser Asp Ser Asn
        115             120             125
Glu Gln Gly Lys Asp Leu Glu Pro Arg Gln Thr Ser Glu Thr Asn His
    130             135             140
Ser Pro Lys Pro Lys Glu Lys Leu Thr Lys Asp Gln Gly Ser Ser Asp
145             150             155             160
Pro Ile Thr Ser Gly Asp Gln Glu Leu Ala Asp Ala Phe Leu Ala Ser
            165             170             175
Ala Lys Ala Glu Lys Asn Gln Pro Arg Ala Lys Val Ala Lys Lys Gly
        180             185             190
Leu Lys Glu Ser Ser Asn Glu Ser Leu Asn Pro Lys Glu Gln Asn Ala
        195             200             205
Lys Asp Ser Pro Lys Gly Glu Glu Arg Thr Asn Lys Pro Gln Asn Ala
    210             215             220
Ile Met Glu Asp Asn Gly Ala Ser Pro Arg Gln Asp Pro Gln Pro Lys
225             230             235             240
Ser Ala Glu Pro Ser Leu Lys Asn Thr Ala Arg Asp Glu Thr Pro Leu
            245             250             255
Lys Glu Asn Lys Pro Val Glu Glu Lys Ala Asn Lys Lys Ala Thr Pro
        260             265             270
Asp Ser Pro Glu Lys Lys Asp Gln Pro Glu Glu Gly Ser Lys Lys Glu
    275             280             285
Gly Ser Lys Ile Glu Ala Thr Pro Leu Asp Ser Gln Lys Glu Ser Glu
    290             295             300
Asp Lys Glu Ala Glu Glu Ala Phe Val Gln Glu Glu Glu Asn Leu
305             310             315             320
Thr Glu Asp Asn Lys Glu Asp Ser Asp Ser Ala Ala Asp Ala Asn Asp
            325             330             335
Asp Thr Ala Ser Asp His Thr Ala Glu Asp Asn Lys Glu Thr Pro Lys
            340             345             350
Lys Val Glu Asn Glu Lys Ser Ala Val Leu Ser Pro Phe His Val Gln
        355             360             365
Asp Leu Phe Arg Phe Asp Gln Thr Ile Phe Pro Ala Glu Ile Asp Asp
    370             375             380
Ile Ala Lys Lys Asn Ile Ser Val Asp Leu Thr Gln Pro Ser Arg Phe
385             390             395             400
Leu Leu Lys Val Leu Ala Gly Ala Asn Ile Gly Ala Glu Phe His Leu
            405             410             415
Asp Ser Gly Lys Thr Tyr Ile Leu Gly Thr Asp Pro Thr Thr Cys Asp
        420             425             430
Ile Val Phe Asn Asp Leu Ser Val Ser His Gln His Ala Lys Ile Thr
        435             440             445
Val Gly Asn Asp Gly Gly Ile Leu Ile Glu Asp Leu Asp Ser Lys Asn
    450             455             460
Gly Val Ile Val Glu Gly Arg Lys Ile Asp Lys Thr Ser Thr Leu Ser
465             470             475             480
Ser Asn Gln Val Val Ala Leu Gly Thr Thr Leu Phe Leu Leu Ile Asp
            485             490             495
His His Ala Pro Ala Asp Thr Ile Val Ala Ser Leu Ser Pro Asp Asp
        500             505             510
Tyr Ser Leu Phe Gly Arg Gln Gln Asp Ala Glu Ala Leu Glu Arg Gln
    515             520             525
Glu Ala Gln Glu Glu Glu Glu Lys Gln Lys Arg Ala Thr Leu Pro Ala
    530             535             540
```

```
Gly Ser Phe Ile Leu Thr Leu Phe Val Gly Gly Leu Ala Ile Leu Phe
545             550             555             560
Gly Ile Gly Thr Ala Ser Leu Phe His Thr Lys Glu Val Val Pro Leu
                565             570             575
Glu Asn Ile Asp Tyr Gln Glu Asp Leu Ala Gln Val Ile Asn Gln Phe
            580             585             590
Pro Thr Val Arg Tyr Thr Phe Asn Lys Thr Asn Ser Gln Leu Phe Leu
            595             600             605
Ile Gly His Val Lys Asn Ser Thr Asp Lys Ser Glu Leu Leu Tyr Lys
    610             615             620
Val Asp Ala Leu Ser Phe Val Lys Ser Val Asp Asp Asn Val Ile Asp
625             630             635             640
Asp Glu Ala Val Trp Gln Glu Met Asn Ile Leu Leu Ser Lys Arg Pro
            645             650             655
Glu Phe Lys Gly Ile Ser Met His Ser Pro Glu Pro Gly Lys Phe Ile
            660             665             670
Ile Thr Gly Tyr Val Lys Thr Glu Glu Gln Ala Ala Cys Leu Val Asp
    675             680             685
Tyr Leu Asn Ile His Phe Asn Tyr Leu Ser Leu Leu Glu Asn Lys Val
    690             695             700
Val Val Glu Thr Gln Met Leu Lys Ala Ile Ala Gly His Leu Leu Gln
705             710             715             720
Gly Gly Phe Ala Asn Ile His Val Ala Phe Val Asn Gly Glu Val Ile
            725             730             735
Leu Thr Gly Tyr Val Asn Asn Asp Asp Ala Glu Lys Phe Arg Ala Val
            740             745             750
Val Gln Glu Leu Ser Gly Ile Pro Gly Val Arg Leu Val Lys Asn Phe
    755             760             765
Ala Val Leu Leu Pro Ala Glu Glu Gly Ile Ile Asp Leu Asn Leu Arg
    770             775             780
Tyr Pro Asn Arg Tyr Arg Val Thr Gly Tyr Ser Arg Tyr Gly Glu Ile
785             790             795             800
Ser Ile Asn Val Val Val Asn Gly Arg Ile Leu Thr Arg Gly Asp Val
            805             810             815
Ile Asp Gly Met Thr Val Thr Ser Ile Gln Pro Asn Ala Ile Phe Leu
            820             825             830
Glu Lys Glu Gly Leu Lys Tyr Lys Ile Asp Tyr Asn Lys
    835             840             845
```

<210> 715
<211> 162
<212> PRT
<213> Chlamydia pneumoniae

<400> 715

```
Leu Asp Leu Lys Glu Glu Lys Ala Gly Phe Arg Asn Glu Ile Val Ser
1               5               10              15
Ile Pro Gln Gly Thr Lys Thr Thr Ile Ala Ala Leu Glu Asn Thr Ser
            20              25              30
Met Leu Glu Lys Leu Ile Lys Asn Phe Ala Thr Tyr Met Gly Ile Thr
        35              40              45
Ser Thr Leu Glu Leu Asp Ala Asp Gly Ala Tyr Val Leu Pro Ile Ser
    50              55              60
Glu Val Val Lys Val Arg Ala Gln Gln Asn Ala Asp Asn Glu Ile Val
65              70              75              80
Leu Ser Ala Ser Leu Gly Ala Leu Pro Pro Ser Ala Asp Thr Ala Lys
            85              90              95
Leu Tyr Leu Gln Met Met Ile Gly Asn Leu Phe Gly Arg Glu Thr Gly
        100             105             110
Gly Ser Ala Leu Gly Leu Asp Ser Glu Gly Asn Val Val Met Val Arg
    115             120             125
```

Arg Phe Ser Gly Asp Thr Thr Tyr Asp Asp Phe Val Arg His Val Glu
    130   135   140
Ser Phe Met Asn Phe Ser Glu Thr Trp Leu Ser Asp Leu Gly Leu Gly
145   150   155   160
Lys Gln

        <210> 716
        <211> 345
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 716
Asn Tyr Arg Ile Val Leu Met Val Leu Gly Val Val Gly Ile Ser Tyr
1   5   10   15
Arg Glu Ala Ala Leu Lys Glu Arg Glu Arg Ala Ile Gln Tyr Leu Gln
            20   25   30
Ser Phe Glu Lys Asn Leu Phe Leu Ala Gln Arg Phe Leu Gly Lys Gly
        35   40   45
Gly Ala Phe Ile Pro Leu Leu Thr Cys His Arg Ala Glu Leu Tyr Tyr
    50   55   60
Tyr Ser Glu Ser Pro Glu Ile Ala Gln Ala Ala Leu Leu Ser Glu Leu
65   70   75   80
Thr Ser Gln Gly Ile Arg Pro Tyr Arg His Arg Gly Leu Ser Cys Phe
                85   90   95
Thr His Leu Phe Gln Val Thr Ser Gly Ile Asp Ser Leu Ile Phe Gly
            100   105   110
Glu Thr Glu Ile Gln Gly Gln Val Lys Arg Ala Tyr Leu Lys Gly Ser
        115   120   125
Lys Glu Arg Glu Leu Pro Phe Asp Leu His Phe Leu Phe Gln Lys Ala
    130   135   140
Leu Lys Glu Gly Lys Glu Tyr Arg Ser Arg Ile Gly Phe Pro Asp His
145   150   155   160
Gln Val Thr Ile Glu Ser Val Val Gln Glu Ile Leu Leu Ser Tyr Asp
                165   170   175
Lys Ser Ile Tyr Thr Asn Phe Leu Phe Val Gly Tyr Ser Asp Ile Asn
            180   185   190
Arg Lys Val Ala Ala Tyr Leu Tyr Gln His Gly Tyr His Arg Ile Thr
        195   200   205
Phe Cys Ser Arg Gln Gln Val Thr Ala Pro Tyr Arg Thr Leu Ser Arg
    210   215   220
Glu Thr Leu Ser Phe Arg Gln Pro Tyr Asp Val Ile Phe Phe Gly Ser
225   230   235   240
Ser Glu Ser Ala Ser Gln Phe Ser Asp Leu Ser Cys Glu Ser Leu Ala
                245   250   255
Ser Ile Pro Lys Arg Ile Val Phe Asp Phe Asn Val Pro Arg Thr Phe
            260   265   270
Leu Trp Lys Glu Thr Pro Thr Gly Phe Val Tyr Leu Asp Ile Asp Phe
        275   280   285
Ile Ser Glu Cys Val Gln Lys Arg Leu Gln Cys Thr Lys Glu Gly Val
    290   295   300
Asn Lys Ala Lys Leu Leu Leu Thr Cys Ala Ala Lys Lys Gln Trp Glu
305   310   315   320
Ile Tyr Glu Lys Lys Ser Ser His Ile Thr Gln Arg Gln Ile Ser Ser
                325   330   335
Pro Arg Ile Pro Ser Val Leu Ser Tyr
            340   345

                            941

<210> 717
<211> 609
<212> PRT
<213> Chlamydia pneumoniae

<400> 717

```
Lys Phe Asn Lys Ile Ser His Met Ala Ala Tyr Thr Glu Ala Ser Ile
1               5                   10                  15
Leu Ser Leu Ala Ser Leu Asp His Ile Arg Leu Arg Ala Gly Met Tyr
            20                  25                  30
Ile Gly Arg Leu Gly Asn Gly Ser Gln Lys Glu Asp Gly Ile Tyr Thr
        35                  40                  45
Leu Phe Lys Glu Val Val Asp Asn Gly Ile Asp Glu Phe Ile Met Gly
    50                  55                  60
His Gly Lys Ser Leu Lys Ile Ser Ala Ser Asp Lys Gln Ile Ser Ile
65                  70                  75                  80
Gln Asp Gln Gly Arg Gly Ile Pro Leu Gly Lys Leu Ile Asp Cys Val
                85                  90                  95
Ser Lys Ile Asn Thr Gly Ala Lys Tyr Thr Gln Asp Val Phe His Phe
                100                 105                 110
Ser Val Gly Leu Asn Gly Val Gly Leu Lys Ala Val Asn Ala Leu Ser
            115                 120                 125
Glu Ile Phe Ser Val Arg Ser Val Arg Lys Lys Lys Tyr His Leu Ala
    130                 135                 140
Thr Phe His Arg Gly Val Leu Gln Glu Ser Lys Gln Gly Ser Thr Lys
145                 150                 155                 160
Asp Pro Asp Gly Thr Phe Val Ser Phe Thr Pro Asp Pro Ser Ile Phe
                165                 170                 175
Pro Glu Phe Thr Phe Asn His Asp Phe Leu Lys Asp Lys Ile Arg Gln
                180                 185                 190
Tyr Thr Tyr Leu His Ser Gly Leu Glu Ile Arg Phe Asn Asp Glu Val
            195                 200                 205
Phe Ile Ser His Asn Gly Leu Lys Asp Leu Phe Asp Ala Glu Ile Thr
    210                 215                 220
Glu Pro Pro Leu Tyr Ser Pro Leu Phe Phe Gln Asn Glu Asp Leu Thr
225                 230                 235                 240
Phe Ile Phe Ser His Leu Glu Gly Asn Thr Glu Arg Tyr Phe Ser Phe
                245                 250                 255
Val Asn Gly Gln Glu Thr Leu Asp Gly Gly Thr His Leu Thr Ala Phe
            260                 265                 270
Lys Glu Ala Ile Val Lys Gly Val Asn Glu Phe Phe Gly Lys Thr Phe
    275                 280                 285
Val Ser Asn Asp Ile Arg Glu Gly Ile Val Gly Cys Ile Ala Ile Lys
    290                 295                 300
Ile Ala Ser Pro Ile Phe Glu Ser Gln Thr Lys Asn Lys Leu Gly Asn
305                 310                 315                 320
Thr Gln Ile Arg Ser Ser Leu Ile Lys Asp Val Lys Glu Ala Ile Val
                325                 330                 335
Gln Ala Leu Arg Lys Asp Lys Val Ala Pro Glu Leu Leu Leu Glu Lys
            340                 345                 350
Ile Lys Phe Asn Glu Lys Thr Arg Lys Asn Ile Gln Phe Ile Lys Gln
    355                 360                 365
Asp Leu Lys Ser Lys Gln Lys Lys Val His Tyr Lys Ile Pro Lys Leu
    370                 375                 380
Arg Asp Cys Lys Phe His Tyr Asn Asp Arg Ser Leu Tyr Gly Glu Ala
385                 390                 395                 400
Ser Ser Ile Phe Leu Thr Glu Gly Glu Ser Ala Ser Ala Ser Ile Leu
                405                 410                 415
Ala Ser Arg Asn Pro Leu Thr Gln Ala Val Phe Ser Leu Arg Gly Lys
            420                 425                 430
```

942

```
Pro Met Asn Val Phe Ser Leu Glu Glu Thr Lys Met Tyr Lys Asn Asp
        435             440             445
Glu Leu Phe Tyr Leu Ala Thr Ala Leu Gly Ile Thr Gln Asn Glu Ile
    450             455             460
Gln His Leu Arg Tyr Asn Lys Val Ile Leu Ala Thr Asp Ala Asp Val
465             470             475             480
Asp Gly Met His Ile Arg Asn Leu Leu Ile Thr Phe Phe Leu Lys Thr
            485             490             495
Leu Leu Pro Leu Val Glu Asn Asn His Leu Phe Ile Leu Glu Thr Pro
            500             505             510
Leu Phe Lys Val Arg Asn Lys Thr Thr Thr Leu Tyr Tyr Tyr Ser Glu
            515             520             525
Gln Glu Lys Met Gln Ala Leu Gln Gln Phe Gly Lys Lys Asp Ser Ser
        530             535             540
Leu Glu Ile Thr Arg Phe Lys Gly Leu Gly Glu Ile Ser Pro Lys Glu
545             550             555             560
Phe Ala Ala Phe Ile Gly Pro Glu Ile Arg Leu Thr Pro Val Thr Ile
            565             570             575
Thr Ser Leu Glu Ser Ile Ser Ser Ile Leu Gln Phe Tyr Met Gly Lys
            580             585             590
Asn Thr Lys Glu Arg Lys Gln Phe Ile Met Asp Asn Leu Ile Thr Asp
            595             600             605
Phe
```

        <210> 718
        <211> 479
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 718
```
Phe Met Arg Asp Val Ser Glu Leu Phe Arg Thr His Phe Met His Tyr
1               5               10              15
Ala Ser Tyr Val Ile Leu Glu Arg Ala Ile Pro His Ile Leu Asp Gly
            20              25              30
Leu Lys Pro Val Gln Arg Arg Leu Leu Trp Thr Leu Phe Leu Met Asp
        35              40              45
Asp Gly Lys Met His Lys Val Ala Asn Ile Ala Gly Arg Thr Met Ala
    50              55              60
Leu His Pro His Gly Asp Ala Pro Ile Val Glu Ala Leu Val Val Leu
65              70              75              80
Ala Asn Lys Gly Tyr Leu Ile Asp Thr Gln Gly Asn Phe Gly Asn Pro
            85              90              95
Leu Thr Gly Asp Pro His Ala Ala Ala Arg Tyr Ile Glu Ala Arg Leu
        100             105             110
Ser Pro Leu Ala Arg Glu Thr Leu Phe Asn Thr Asp Leu Ile Ala Phe
    115             120             125
His Asp Ser Tyr Asp Gly Arg Glu Lys Glu Pro Asp Ile Leu Pro Ala
    130             135             140
Lys Leu Pro Val Leu Leu Leu His Gly Val Asp Gly Ile Ala Val Gly
145             150             155             160
Met Thr Thr Lys Ile Phe Pro His Asn Phe Ala Glu Leu Leu Lys Ala
            165             170             175
Gln Ile Ala Ile Leu Asn Asp Lys Lys Phe Thr Val Phe Pro Asp Phe
        180             185             190
Pro Ser Gly Gly Leu Met Asp Pro Ser Glu Tyr Gln Asp Gly Leu Gly
    195             200             205
Ser Ile Thr Leu Arg Ala Ser Ile Asp Ile Ile Asn Asp Lys Thr Leu
    210             215             220
Val Val Lys Gln Ile Cys Pro Gln Ser Thr Thr Glu Thr Leu Ile Arg
225             230             235             240
```

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```
Ser Ile Glu Asn Ala Ala Lys Arg Gly Thr Ile Lys Ile Asp Thr Ile
            245                     250                 255
Gln Asp Phe Ser Thr Asp Val Pro His Ile Glu Ile Lys Leu Pro Lys
            260                 265                 270
Gly Ser Arg Ala Lys Glu Met Leu Pro Leu Leu Phe Glu His Thr Glu
            275                 280                 285
Cys Gln Val Ile Leu Tyr Ser Lys Pro Thr Val Ile Tyr Glu Asn Lys
    290                 295                 300
Pro Val Glu Cys Ser Ile Ser Glu Ile Leu Lys Leu His Thr Thr Ala
305                 310                 315                 320
Leu Gln Gly Tyr Leu Glu Lys Glu Leu Leu Leu Leu Gln Glu Gln Leu
                325                 330                 335
Thr Leu Asp His Tyr His Lys Thr Leu Glu Tyr Ile Phe Ile Lys His
            340                 345                 350
Lys Leu Tyr Asp Ser Val Arg Glu Val Leu Ala Ile Asn Lys Lys Ile
            355                 360                 365
Ser Ala Asp Asp Leu His Gln Ala Val Leu His Ala Leu Glu Pro Trp
370                 375                 380
Leu His Glu Leu Ala Thr Pro Val Thr Lys Gln Asp Thr Ser Gln Leu
385                 390                 395                 400
Ala Ser Leu Thr Ile Lys Lys Ile Leu Cys Phe Asn Glu Glu Ala Cys
                405                 410                 415
Thr Lys Glu Leu Leu Ala Ile Glu Lys Lys Gln Ala Ala Ile Gln Lys
                420                 425                 430
Asp Leu Gly Arg Ile Lys Glu Val Thr Val Lys Tyr Leu Lys Gly Leu
            435                 440                 445
Leu Glu Arg His Gly His Leu Gly Glu Arg Lys Thr Gln Ile Thr Asn
    450                 455                 460
Phe Lys Thr Ala Lys Thr Ser Ile Leu Lys Gln Gln Thr Leu Ile
465                 470                 475
```

        <210> 719
        <211> 113
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 719
```
Ile Arg Ile Lys Phe Ile Asp Thr Ile Thr Ile Val Val Arg Met Glu
1               5                   10                  15
Pro Arg His Ile Tyr Ile Arg Lys Pro Glu Thr Pro Lys Ala Pro Asp
            20                  25                  30
Val Glu Lys Pro Gly Val Pro Glu Tyr Met Thr Met Ala Asn Thr Pro
        35                  40                  45
Thr Phe Glu Gly Pro Val Lys Thr Leu Asp Gln Leu Arg Arg Ala Leu
    50                  55                  60
Ile Glu Gln Arg Gly Ala Glu Glu Gly Gln Lys Met Tyr Asp Asn Phe
65                  70                  75                  80
Ile Gln Ser Ile Leu Ile Ser Thr Phe Gly Leu Val His Lys Asp Met
                85                  90                  95
Asp Arg Ala Gln Lys Ala Ser Lys Arg Met Arg Ser Val Tyr Lys Glu
            100                 105                 110
Gln
```

        <210> 720
        <211> 109
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 720

```
Arg Ala Val Met Ser Phe Thr Tyr Phe Leu Ala Leu Pro Val Asp Arg
1           5               10              15
Leu Met Gln Glu Arg Phe Leu Cys Ser Pro Lys Arg Trp Ala Pro Phe
        20              25              30
Ile Asn Ser Pro Leu Tyr Leu Thr Leu Ile Ala Asp His Asp Thr Pro
        35              40              45
Tyr Leu Ala Lys Asn Leu Asp Lys Phe Pro Leu Pro Val Glu Gln Trp
    50              55              60
Glu Lys Thr Val Leu His Val Ser Ser Leu Leu Lys Ser Ile Phe Leu
65              70              75              80
Cys Ser Asp Leu Ser Ser Leu Arg Leu Leu Ala Cys Thr Lys Phe Glu
            85              90              95
Ile Leu Thr Leu Asn Asp Leu Tyr Cys Ala Gln Asn Ile
            100             105
```

<400> 721

```
Phe Asp Ile Lys Leu Val Lys Lys Val Ile Lys Ile Ser Met Lys Thr
1           5               10              15
Val Thr Ser Phe Thr Val Cys Lys Glu Asn Ser Gly Arg Leu Asp Lys
        20              25              30
Tyr Leu Thr Glu Val His Pro Lys Tyr Ser Arg Ala Phe Tyr Gln Glu
        35              40              45
His Ile Leu Ser Gly Leu Val Gln Ile Asn Gly Gln Ile Asn Thr Arg
    50              55              60
Val Ala Thr Arg Leu Asn Cys Gly Asp Ile Val Thr Ile Asp Ile Gln
65              70              75              80
Glu Lys Glu Glu Leu Leu Glu Leu Leu Pro Glu Ala Ile Pro Leu Asp
            85              90              95
Lys Val Tyr Glu Asp Gly Met Ile Leu Val Ile Asn Lys Pro Arg Asp
            100             105             110
Met Val Val His Pro Ala Pro Gly His Phe His Gly Thr Leu Val His
        115             120             125
Ala Leu Leu His Glu Ile Gly Glu Arg Leu Lys Glu Glu Phe Pro Glu
    130             135             140
Glu Pro Trp Arg Pro Gly Ile Val His Arg Leu Asp Lys Asp Thr Ser
145             150             155             160
Gly Leu Ile Ile Thr Ala Lys Thr Arg Gln Ala Lys Lys Val Phe Ser
            165             170             175
Glu Leu Phe Ser Thr Lys Arg Leu Lys Lys Ser Tyr Leu Ala Val Cys
            180             185             190
Ile Gly Lys Pro Arg Ser Thr Thr Ile His Thr His Ile Ser Arg His
            195             200             205
Gln Asn Lys Arg Lys Glu Met Thr Val Ser Ser Gln Gly Lys Glu Ala
    210             215             220
Val Thr His Cys Gln Val Leu Ala Phe Asn Gly Lys Leu Ser Phe Val
225             230             235             240
Ala Leu Ser Pro Glu Thr Gly Arg Thr His Gln Leu Arg Val His Met
            245             250             255
Lys His Leu Gly Thr Pro Ile Leu Gly Asp Pro Val Tyr Gly Ile Pro
            260             265             270
Ser Met Asn Ser Ser Tyr Gly Leu Asp Lys Gln Gln Leu His Ala Tyr
        275             280             285
Ser Val Asp Phe Thr His Pro Glu Thr Arg Gln Phe Cys Ser Leu Lys
    290             295             300
```

```
Ala Gly Leu Pro Glu Asp Met Arg Ser Leu Leu Ile Lys Glu Phe Arg
305             310             315             320
Asn Glu Thr Thr Ile Leu Asn Lys Asn Leu Leu Glu Ser Ile Leu Lys
        325             330             335
Glu Gln


        <210> 722
        <211> 82
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 722
Leu Arg Ile Thr Met Lys Glu Phe Leu Ala Tyr Ile Ile Lys Asn Leu
1           5               10              15
Val Asp Arg Pro Glu Glu Val Arg Ile Lys Glu Val Gln Gly Thr His
            20              25              30
Thr Ile Ile Tyr Glu Leu Ser Val Ala Lys Pro Asp Ile Gly Lys Ile
        35              40              45
Ile Gly Lys Glu Gly Arg Thr Ile Lys Ala Ile Arg Thr Leu Leu Val
    50              55              60
Ser Val Ala Ser Arg Asn Asn Val Arg Val Ser Leu Glu Ile Met Glu
65              70              75              80
Glu Lys


        <210> 723
        <211> 273
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 723
Lys Arg Met Val Met Phe Asn Asn Lys Met Ile Leu Ile Ala Gly Pro
1           5               10              15
Cys Val Ile Glu Gly Glu Asp Ile Thr Leu Glu Ile Ala Gly Lys Leu
            20              25              30
Gln Ser Ile Leu Ala Pro Tyr Ser Asp Arg Ile Gln Trp Phe Phe Lys
        35              40              45
Ser Ser Tyr Asp Lys Ala Asn Arg Ser Ser Leu Asn Ser Phe Arg Gly
    50              55              60
Pro Gly Leu Thr Glu Gly Leu Arg Ile Leu Ala Lys Val Lys Glu Thr
65              70              75              80
Phe Gly Val Gly Ile Leu Thr Asp Val His Thr Pro Gln Asp Ala Tyr
            85              90              95
Ala Ala Ala Glu Val Cys Asn Ile Leu Gln Val Pro Ala Phe Leu Cys
            100             105             110
Arg Gln Thr Asp Leu Leu Val Ala Thr Ala Glu Thr Gly Ala Ile Val
        115             120             125
Asn Leu Lys Lys Gly Gln Phe Leu Ser Pro Trp Asp Met Glu Gly Pro
    130             135             140
Ile Asn Lys Val Leu Ser Thr Gly Asn Asn Lys Ile Leu Leu Thr Glu
145             150             155             160
Arg Gly Cys Ser Phe Gly Tyr Asn Asn Leu Val Ser Asp Met Arg Ser
            165             170             175
Ile Pro Val Leu Ser Arg Ser Gly Phe Pro Val Ile Phe Asp Ala Thr
            180             185             190
His Ser Val Gln Leu Pro Gly Ala Leu Ser Thr Glu Ser Gly Gly Leu
        195             200             205
Thr Glu Phe Val Pro Thr Leu Ser Arg Ala Ala Leu Ala Ala Gly Ala
210             215             220
```

His Gly Leu Phe Ile Glu Thr His Thr Asn Pro Lys Ile Ala Lys Ser
225   230   235   240
Asp Ala Ala Ser Met Leu Ser Leu Glu Glu Phe Ala Ala Leu Leu Pro
                245   250   255
Thr Trp Asp Gln Leu Phe Thr Cys Val Ser Ser Phe Asp Met Val Ser
            260   265   270
Ala

        <210> 724
        <211> 166
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 724
Tyr Gly Leu Ser Met Thr Lys Phe Leu Tyr Cys Gly Leu Phe Tyr Ser
1   5   10   15
Leu Gly Leu Leu Val Leu Ala Phe Gly Thr Met Val Ala Ile Ile Gln
            20   25   30
Val Asp Gln Ile Cys Asp Val Ser Cys Met Asn Lys His Phe Gln Glu
        35   40   45
Ser Pro Pro Phe Leu Lys Ile Lys Lys Val Asn Val Ser Lys Gln Ile
    50   55   60
Cys Ser Pro Glu Glu Arg Phe Phe His Cys Lys Ile Asp Lys Ser Cys
65   70   75   80
Met Glu Leu His Phe Pro Gln Ser Ser Tyr Ser Cys Lys Glu Tyr Leu
                85   90   95
Thr Arg Ile Ser Gly His Ile Leu Thr Gln Asn Phe Glu Lys Gln Met
            100   105   110
Gln Phe Arg Gly Asn Ser Gly Leu Leu Asn Tyr Gln Asp Gly Ser Leu
        115   120   125
His Val Tyr Asp Cys Arg Phe Gln Val Asp Pro Val Pro Gly Tyr Gly
    130   135   140
Ser Pro Asp Lys Glu Asp Ser Ser Ser Gly Gly Met Lys Thr Leu Tyr
145   150   155   160
Leu Ser Leu Phe Arg Asn
                165

        <210> 725
        <211> 242
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 725
Ala Ser Met Pro Ile Leu Ser Val Cys Asn Leu Val Lys Lys Tyr Asn
1   5   10   15
Lys Lys Pro Val Thr Asn Asp Val Ser Phe Gln Ile Asn Pro Gly Glu
            20   25   30
Ile Val Gly Leu Leu Gly Pro Asn Gly Ala Gly Lys Thr Thr Ala Phe
        35   40   45
Tyr Leu Thr Val Gly Leu Ile Arg Pro Asp Ser Gly Lys Ile Ile Phe
    50   55   60
Lys Asn Val Asp Val Thr Lys Lys Thr Met Asp His Arg Ala Arg Leu
65   70   75   80
Gly Ile Gly Tyr Leu Ala Gln Glu Pro Thr Ile Phe Lys Glu Leu Thr
                85   90   95
Val Gln Asp Asn Leu Ile Cys Ile Leu Glu Ile Ile Tyr Lys Ala Arg
            100   105   110
Lys Gln Gln Ser His Leu Leu Asn Thr Leu Val Asp Asp Leu Gln Leu
        115   120   125

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Gly Ser Cys Leu His Lys Lys Ala Gly Thr Leu Ser Gly Gly Glu Arg
    130   135   140
Arg Arg Leu Glu Ile Ala Cys Val Leu Ala Leu Asn Pro Ser Val Leu
145   150   155   160
Leu Leu Asp Glu Pro Phe Ala Asn Val Asp Pro Leu Val Ile Gln Asn
                165   170   175
Val Lys Tyr Leu Ile Lys Ile Leu Ala Gly Arg Gly Ile Gly Ile Leu
                180   185   190
Ile Thr Asp His Asn Ala Lys Glu Leu Leu Ser Ile Ala Asp Arg Cys
                195   200   205
Tyr Leu Ile Ile Asp Gly Lys Ile Phe Phe Glu Gly Ser Ser Ser Gln
    210   215   220
Met Ile Ser Asn Pro Met Val Lys Gln His Tyr Leu Gly Asp Ser Phe
225   230   235   240
Ser Tyr

Arg Thr Ser Thr Arg Leu Asp Tyr Arg Ser Gly Cys Ile Leu Ser Lys
  1   5   10   15
Ile Leu Pro Phe Pro Glu Leu Trp Lys Met Leu Leu Gly Phe Leu Cys
                20   25   30
Asp Cys Pro Cys Ala Ser Trp Gln Cys Ala Ala Val Ala Asn Cys Tyr
            35   40   45
Asp Ser Val Phe Met Ser Arg Pro Glu His Lys Pro Asn Ile Pro Tyr
    50   55   60
Ile Thr Lys Ala Thr Arg Arg Gly Leu Arg Met Lys Thr Leu Ala Tyr
65   70   75   80
Leu Ala Ser Leu Lys Asp Ala Arg Gln Leu Ala Tyr Asp Phe Leu Lys
                85   90   95
Asp Pro Gly Ser Leu Ala Arg Leu Ala Lys Ala Leu Ile Ala Pro Lys
                100   105   110
Glu Ala Leu Gln Glu Gly Asn Leu Phe Phe Tyr Gly Cys Ser Asn Ile
        115   120   125
Glu Asp Ile Leu Glu Glu Met Arg Arg Pro His Arg Ile Leu Leu Leu
    130   135   140
Gly Phe Ser Tyr Cys Gln Lys Pro Lys Ala Cys Pro Glu Gly Arg Phe
145   150   155   160
Asn Asp Ala Cys Arg Tyr Asp Pro Ser His Pro Thr Cys Ala Ser Cys
                165   170   175
Ser Ile Gly Thr Met Met Arg Leu Asn Ala Arg Arg Tyr Thr Thr Val
                180   185   190
Ile Ile Pro Thr Phe Ile Asp Ile Ala Lys His Leu His Thr Leu Lys
                195   200   205
Lys Arg Tyr Pro Gly Tyr Gln Ile Leu Phe Ala Val Thr Ala Cys Glu
    210   215   220
Leu Ser Leu Lys Met Phe Gly Asp Tyr Ala Ser Val Met Asn Leu Lys
225   230   235   240
Gly Val Gly Ile Arg Leu Thr Gly Arg Ile Cys Asn Thr Phe Lys Ala
                245   250   255
Phe Lys Leu Ala Glu Arg Gly Val Lys Pro Gly Val Thr Ile Leu Glu
                260   265   270
Glu Asp Gly Phe Glu Val Leu Ala Arg Ile Leu Thr Glu Tyr Ser Ser
    275   280   285
Ala Pro Phe Pro Arg Asp Phe Cys Glu Ile His
    290   295

<210> 727
<211> 81
<212> PRT
<213> Chlamydia pneumoniae

<400> 727

```
Ser Cys Gly Asp Val Gly Met Phe Phe Ala Pro Leu Leu Tyr Glu Ser
1               5                   10                  15
Leu Arg Arg Gly Leu Met His Pro Thr Ser His Met Gln Gln Gln Leu
            20                  25                  30
Ala Arg Leu Glu Phe Ile Asn Asp Gln Leu Thr Thr Glu Leu Glu His
        35                  40                  45
Val Asn Glu Leu Leu Cys Ser Leu Gly Phe Pro Glu Gly Leu Thr Thr
    50                  55                  60
Ile Lys Ala Ile Ala Glu Glu Val Leu Ser Asp Asp Glu Pro Leu Leu
65                  70                  75                  80
Asp
```

<210> 728
<211> 835
<212> PRT
<213> Chlamydia pneumoniae

<400> 728

```
Ala Asp Ile Asp Met Ile Tyr Ser Thr Ser Ile Ser Thr Phe Tyr Lys
1               5                   10                  15
Lys Leu Ser Leu Val Ser Ser Met His Ser Phe Ala Gln Arg His Arg
            20                  25                  30
Glu Ser Leu Glu His Ile Ala Asn Tyr Glu Lys Thr Thr Ala Glu Arg
        35                  40                  45
Asp Ile Leu Lys Arg Leu Ile Glu Val Leu Asp Gln Arg Ala Ser Glu
    50                  55                  60
Arg Tyr Arg Ser Ala Val Glu Lys Leu His Lys Tyr Glu Val Glu Arg
65                  70                  75                  80
Ala Thr Val Ala Lys Ser Ile Pro Val Ala Ala Ile His Glu Lys Pro
                85                  90                  95
Leu Ser Ser Thr His Ala Ser Val Gln Val Thr Ala Ser Thr Pro Ala
                100                 105                 110
Ala Thr Gly Ser Gly Val Gly Ala Tyr Tyr Asn Ala Val Lys Gln Lys
            115                 120                 125
Trp Ala Gln Asp Leu Ile Val Glu Leu Asn Thr Val Met Thr Thr Ile
            130                 135                 140
Met Ala Ser Val Asn Ser Lys Asn Pro Ala Asn Lys Asp Val Phe Asp
145                 150                 155                 160
Lys Leu Asn Thr Glu Leu Gln Ala Leu Val Ala Ala Gly Asn Asn Leu
                165                 170                 175
Thr Glu Glu Asn Phe Gln Thr Leu Tyr Asn Phe Pro Glu Glu Ile Phe
                180                 185                 190
Thr Ala Ile Gln Arg Ala Asp Thr Phe Thr Gly Gly Met Lys Thr Asp
            195                 200                 205
Phe Thr Asn Gln Leu Ala Gly Lys Tyr Gly Asn Gln Ala Thr Leu Thr
    210                 215                 220
Gln Thr Phe Ala Asp Gly Arg Val Glu Gly Phe Lys Asp Ile Leu Thr
225                 230                 235                 240
Ala Val Gln Gly Val Leu Thr Pro Glu Gln Phe Thr Ile Phe Ala Glu
                245                 250                 255
Ile Ala Thr Glu Leu Gln Ala Leu Ala Asp His Val Gly Asn Phe Asp
                260                 265                 270
Glu Ala Gly Leu Gln Arg Ile Glu Asp Ala Gly Glu Lys Leu Ala Ala
            275                 280                 285
```

```
Val Ile Asn Ser Ser Asp Leu Thr Arg Asn Asp Lys Ile Met Phe Cys
    290                 295                 300
Gln His Ile Thr Asp Leu Tyr Ser Asp Gln Val Ala Ala Leu Gly Ser
305             310                 315                         320
Phe Asp Thr Val Leu Asp Ala Ser Ile Tyr Val Asn Gln His Gln Gly
                325                 330                     335
Thr Met Phe Ser Asn Leu Ser Ser Phe Val Gly Ser Leu Ile Gly Thr
                340                 345                 350
Phe Ala Pro Ile Asp Leu Ser Ser Ser Gln Gly Asp Ile Ser Ser Ala
                355                 360                 365
Ala Leu Ala Gly Ala Leu Gln Thr Ala Arg Gly Leu Asn Ser Arg Phe
    370                 375                 380
Asn Glu Leu Thr Ala Glu Gln Gln Lys Leu Ile Asn Glu Cys Ile Lys
385                 390                 395                     400
Ser Leu Val Thr Phe Lys Cys Gly Glu His Leu Gly Ala Ile Trp Ala
                405                 410                     415
Tyr Phe Thr Ala Ser Thr Val Val Ala Leu Asn Pro Thr Ala Thr Met
                420                 425                 430
Asp His Val Lys Ala Ala Ile Leu Glu Glu Ala Lys Glu Leu Asp Asn
                435                 440                 445
Ser Ser Phe Gln Leu Ala Ser Ser Ile Lys Ser Ala Met Thr Ser Ile
    450                 455                 460
Val Asn Ser Ser Gly Ser Phe Ser Val Thr Val Asn Ser Ser Thr Leu
465                 470                 475                     480
Gln Tyr Thr Ile Tyr Ser Glu Lys Asn Gly Lys Val Glu Ile Asn Gln
                485                 490                 495
Ile Leu Leu Asn Tyr Gly Ser Thr Gly Phe Leu Pro Glu Ile Thr Lys
                500                 505                 510
Leu Ala Lys Thr Asn Ala Glu Ser Thr Ala Arg Ser Tyr Phe Arg Phe
    515                 520                 525
Lys Ala Leu Ala Ala Val Glu Ser Glu Asn Val Gln Asn Lys Ile Glu
    530                 535                 540
Asp Leu Gln Ser Gln Leu Gln Gln Phe Thr Asn Met Lys Thr Glu Leu
545                 550                 555                     560
Phe Asp Gly Gln Leu Leu Ser Gln Ala Ser Glu Leu Arg Ala Leu Pro
                565                 570                     575
Leu Pro Ser Ala Val Ala Ser Val Leu Ile Asp Arg Tyr Met Pro Lys
                580                 585                 590
Glu Val Asp Tyr Leu Asn Glu Ile Tyr Lys Lys Leu Tyr Tyr Ser Asn
    595                 600                 605
Leu Gly Ser Ser Ile Gly Asn Ser Ile Ile Asp Ala Ile Ser Gln Tyr
    610                 615                 620
Val Asn Gly Ala Thr Tyr Phe Asn Phe Ala Ser Tyr Val Gly Gln Gln
625                 630                 635                     640
Pro Ala Val Gly Ala Gly Gly Ala Asn Ala Phe Pro Gly Ser Gln Glu
                645                 650                 655
Ser Ala Gln Ala Lys Leu Asp Gln Glu Arg Lys Gln Ala Ala Leu Tyr
                660                 665                 670
Leu Gln Glu Thr Arg Gly Ala Leu Thr Val Ile Glu Glu Gln Arg Ala
    675                 680                 685
Arg Val Leu Lys Asp Asp Lys Ile Thr Asn Glu Gln Arg Ser Thr Ile
    690                 695                 700
Leu Asp Ser Leu Arg Asn Tyr Glu Asp Asn Ile Asn Ser Ile Ser Gly
705                 710                 715                     720
Ser Leu Val Leu Leu Gln Asn Tyr Leu Gln Pro Leu Ser Ile Ala Gly
                725                 730                     735
Gly Ser Val Ala Gly Thr Phe Glu Val Lys Glu Gly Gln Glu Gln Trp
                740                 745                 750
Gln Ala Arg Leu Gln Ile Leu Glu Glu Ala Leu Val Ser Gly Leu Val
    755                 760                 765
```

```
Gly Asn Met Ile Asn Gly Gly Met Phe Pro Leu Gln Ser Thr Ile Gln
    770                 775                 780
Ser Asp Gln Gln Ser Phe Ala Asp Met Gly Gln Asn Phe Gln Leu Asp
785                 790                 795                     800
Leu Gln Met His Leu Thr Ser Met Gln Gln Glu Trp Thr Val Val Ala
                805                 810                 815
Thr Ser Leu Gln Leu Leu Asn Gln Met Tyr Leu Ser Leu Ala Arg Ser
                820                 825                 830
Leu Thr Gly
        835


        <210> 729
        <211> 878
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 729
Lys Tyr Tyr Leu Phe Ser Met Ser Thr Phe Ser Ile Gln Asn Arg Leu
1               5                   10                  15
Arg Thr Ile Ser Gly Glu Ser Thr Arg Ile Ile Lys Leu Asp His Lys
            20                  25                  30
Tyr Ser Gly Phe Asp Pro Arg Ser Val Pro Ala Ile Asn Leu Glu Glu
        35                  40                  45
Leu Asn Ser Gly Ile Tyr Ala Leu Arg His Leu Met Asn Ala Leu Gln
    50                  55                  60
Ser Glu Asn Thr Asn Val Ala Ala Leu Leu Asn Pro Asn Asn Thr Ile
65                  70                  75                  80
Phe Pro Thr Thr Ser Trp Thr Asp Tyr Lys His Ser Arg Pro Gln Ala
                85                  90                  95
Ser Ser Pro Arg Ala Pro Ser Ser Gln Thr Pro Thr Asp Ile Val Ser
            100                 105                 110
Ala Ala Ala Leu Ala Leu Val Leu Val Ile Asp Gly Gly Leu Ala Glu
        115                 120                 125
Leu Val Ala Ser Val Thr Glu Ile Asp Leu Gly Ala Leu Ser Thr Ile
    130                 135                 140
Ser Thr Val Arg Gln Leu Met Ala Ser Tyr Leu Gly Leu Thr Thr Leu
145                 150                 155                 160
Thr Ala Glu Gln Glu Lys Val Val Phe Ser Ser Ser Tyr Val Pro Ser
                165                 170                 175
Glu Lys Asn Leu Leu Glu His Val Lys Gln Glu Lys Ala Ala Glu Ile
            180                 185                 190
Gln Ala Lys Gln Glu Glu Ile Lys Ala Val Leu Glu Ala Lys Gly Val
        195                 200                 205
Ser Thr Glu Glu Ile Glu Ala Ile Leu Lys Glu Tyr Pro Asp Ile Tyr
    210                 215                 220
Ala Ala Asp Phe Phe Lys Glu Phe Ile Glu Glu Pro Leu His Thr Tyr
225                 230                 235                 240
Arg Ala Lys Val Gly Ala Pro Ile Gln Glu Met Asn Glu Asn Ala Ile
            245                 250                 255
Gln Leu Leu Pro Thr Pro Pro Ala Ile Thr Pro Asp Asn Val Asn Glu
            260                 265                 270
Val Asn Gly Met Asn Thr Leu Ser Thr Ile Leu Gln Ala Ile Asp Asp
        275                 280                 285
Ala Ile Lys Gln Ala Pro Ala Leu Gly Gly Asp Gln Glu Ile Ile Thr
    290                 295                 300
Ile Leu Gln Thr Leu Val Pro Leu Val Asp Lys Thr Thr Phe Thr Lys
305                 310                 315                 320
Ala Glu Phe Asp Leu Ile Tyr Thr Ala Thr Gln Leu Pro Asn Thr Ala
                325                 330                 335
Ser Leu Lys Leu Tyr Leu Thr Asp Arg Gln Ile Ala Glu Tyr Arg Gly
            340                 345                 350
```

951

```
Lys Ile Thr Lys Val Tyr Gln Asn Ser Ile Gln Asn Leu Ser Glu Thr
        355                 360                 365
Lys Arg Val Val Glu Asn Asn Arg Ser Met Leu Glu Thr Gln Leu Ser
        370                 375                 380
Met Phe Gln Gln Ala Gln Asn Cys Phe Val Thr Trp Ile Ser Gln Ala
385                 390                 395                 400
Asn Ala Leu Asn Ile Ala Ile Thr Asn Lys Tyr Ile Ser Ala Val Leu
                405                 410                 415
Thr Thr Ser Met Glu Met Tyr Gly Gly Leu Leu Cys Leu Ser Tyr Met
                420                 425                 430
Tyr Glu Arg Leu Ala Asp Asp Glu Lys Ala Ile Phe Asp Lys Ser Val
        435                 440                 445
Asn Glu Tyr Leu Pro Ile His Ile Val Val Gly Gly Ser Trp Val Asn
        450                 455                 460
Gly Trp Ile Ala Lys Met Ala Ala Tyr Gln Glu Leu Ala Glu Tyr Ser
465                 470                 475                 480
Leu Gly Thr Ala Val Thr Ser Gln Asp Gln Ile Lys Ala Tyr Leu Gln
                485                 490                 495
Thr Arg Gly Asn Glu Phe Lys Ala Thr Arg His Phe Phe His Asn Ile
        500                 505                 510
Gly Asp Gln Met Tyr Gln Phe Ala Asn Glu Thr Val Phe Gly Asn Cys
        515                 520                 525
Leu Thr Thr Ala Asn Gly Ala Ile Gln Pro Asp Leu Gly Gly Phe Ile
        530                 535                 540
Arg Glu Ala Met Thr Asn Val Gly Thr Val Glu Ala Asp Tyr Val Ser
545                 550                 555                 560
Asn Ala Gln Arg Ile Leu Asn Glu Phe Asn Thr Ala Ala Thr Ala His
                565                 570                 575
Val Leu Gln Leu Gln Leu Gln Ile Ala Glu Leu Gln Lys Lys Ala Asp
        580                 585                 590
Asp Leu Asp Pro Gly Lys Ala Ser Phe Thr Glu Asn Arg Lys Phe Ala
        595                 600                 605
Val Ala Ala Trp Ile Thr Ser Glu Ser Leu Gly Asp Ala Leu Ile Ser
610                 615                 620
Met Ile Leu Asn Ser Gln Leu Pro Lys Gln Glu Ala Phe Leu Lys Pro
625                 630                 635                 640
Leu Ile Glu Glu Ile Asn Phe Asn Asn Leu Ala Ala Asn Ala Leu Asn
                645                 650                 655
Ser Leu Leu Gln Ile Thr Asn Glu Phe Ser Thr Thr Ser Val Tyr Tyr
                660                 665                 670
Ser Leu Ser Ser Tyr Leu Val Gln Ser Lys Thr Gly Gln Asn Leu Phe
                675                 680                 685
Ala Gly Asp Tyr Tyr Glu Thr Leu Leu Ala Ala Ala Arg Glu Arg Glu
        690                 695                 700
Tyr Ile Tyr Arg Asp Thr Ala Arg Cys Lys Gln Ala Ile Asn Leu Val
705                 710                 715                 720
Asn Gly Leu Leu Gln Lys Ile Asn Ser Leu Pro Gly Ala Thr Ser Ala
                725                 730                 735
Gln Lys Gln Glu Met Leu Asn Ala Thr Thr Tyr Tyr Gln Tyr Ser Leu
                740                 745                 750
Ser Val Thr Leu Asn Gln Leu Thr Val Leu Glu Ser Leu Leu Ala Gly
        755                 760                 765
Leu Lys Met Thr Leu Gln Thr Thr Ser Asn Asn Lys Tyr Asp Lys Ser
        770                 775                 780
Val Phe Lys Ile Glu Ser Phe Asp Asp Trp Ile Pro Thr Leu Ala Ala
785                 790                 795                 800
Leu Glu Ser Phe Leu Thr Ser Gly Phe Pro Asn Ile Ser Ala Thr Gly
                805                 810                 815
Gly Leu Gly Pro Leu Phe Thr Gln Val Gln Ser Asp Gln Gln Thr Tyr
        820                 825                 830
```

Thr Ser Gln Gly Gln Thr Gln Gln Leu Asn Leu Gln Asn Gln Met Thr
        835   840   845
Thr Ile Gln Gln Glu Trp Thr Leu Val Ser Thr Ser Met Gln Val Leu
        850   855   860
Asn Gly Ile Leu Ser Gln Leu Ala Gly Ala Ile Tyr Ser Asn
865   870   875

        <210> 730
        <211> 653
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 730
Val Phe Met Val Asn Pro Ile Gly Pro Gly Pro Ile Asp Glu Thr Glu
 1   5   10   15
Arg Thr Pro Pro Ala Asp Leu Ser Ala Gln Gly Leu Glu Ala Ser Ala
                20   25   30
Ala Asn Lys Ser Ala Glu Ala Gln Arg Ile Ala Gly Ala Glu Ala Lys
        35   40   45
Pro Lys Glu Ser Lys Thr Asp Ser Val Glu Arg Trp Ser Ile Leu Arg
        50   55   60
Ser Ala Val Asn Ala Leu Met Ser Leu Ala Asp Lys Leu Gly Ile Ala
65   70   75   80
Ser Ser Asn Ser Ser Ser Ser Thr Ser Arg Ser Ala Asp Val Asp Ser
                85   90   95
Thr Thr Ala Thr Ala Pro Thr Pro Pro Pro Thr Phe Asp Asp Tyr
                100   105   110
Lys Thr Gln Ala Gln Thr Ala Tyr Asp Thr Ile Phe Thr Ser Thr Ser
        115   120   125
Leu Ala Asp Ile Gln Ala Ala Leu Val Ser Leu Gln Asp Ala Val Thr
        130   135   140
Asn Ile Lys Asp Thr Ala Ala Thr Asp Glu Glu Thr Ala Ile Ala Ala
145   150   155   160
Glu Trp Glu Thr Lys Asn Ala Asp Ala Val Lys Val Gly Ala Gln Ile
                165   170   175
Thr Glu Leu Ala Lys Tyr Ala Ser Asp Asn Gln Ala Ile Leu Asp Ser
                180   185   190
Leu Gly Lys Leu Thr Ser Phe Asp Leu Leu Gln Ala Ala Leu Leu Gln
        195   200   205
Ser Val Ala Asn Asn Asn Lys Ala Ala Glu Leu Leu Lys Glu Met Gln
        210   215   220
Asp Asn Pro Val Val Pro Gly Lys Thr Pro Ala Ile Ala Gln Ser Leu
225   230   235   240
Val Asp Gln Thr Asp Ala Thr Ala Thr Gln Ile Glu Lys Asp Gly Asn
                245   250   255
Ala Ile Arg Asp Ala Tyr Phe Ala Gly Gln Asn Ala Ser Gly Ala Val
                260   265   270
Glu Asn Ala Lys Ser Asn Asn Ser Ile Ser Asn Ile Asp Ser Ala Lys
        275   280   285
Ala Ala Ile Ala Thr Ala Lys Thr Gln Ile Ala Glu Ala Gln Lys Lys
        290   295   300
Phe Pro Asp Ser Pro Ile Leu Gln Glu Ala Glu Gln Met Val Ile Gln
305   310   315   320
Ala Glu Lys Asp Leu Lys Asn Ile Lys Pro Ala Asp Gly Ser Asp Val
                325   330   335
Pro Asn Pro Gly Thr Thr Val Gly Gly Ser Lys Gln Gln Gly Ser Ser
                340   345   350
Ile Gly Ser Ile Arg Val Ser Met Leu Leu Asp Asp Ala Glu Asn Glu
        355   360   365
Thr Ala Ser Ile Leu Met Ser Gly Phe Arg Gln Met Ile His Met Phe
        370   375   380

953

```
Asn Thr Glu Asn Pro Asp Ser Gln Ala Ala Gln Gln Glu Leu Ala Ala
385             390             395             400
Gln Ala Arg Ala Ala Lys Ala Ala Gly Asp Asp Ser Ala Ala Ala Ala
            405             410             415
Leu Ala Asp Ala Gln Lys Ala Leu Glu Ala Ala Leu Gly Lys Ala Gly
            420             425             430
Gln Gln Gln Gly Ile Leu Asn Ala Leu Gly Gln Ile Ala Ser Ala Ala
        435             440             445
Val Val Ser Ala Gly Val Pro Pro Ala Ala Ala Ser Ser Ile Gly Ser
    450             455             460
Ser Val Lys Gln Leu Tyr Lys Thr Ser Lys Ser Thr Gly Ser Asp Tyr
465             470             475             480
Lys Thr Gln Ile Ser Ala Gly Tyr Asp Ala Tyr Lys Ser Ile Asn Asp
            485             490             495
Ala Tyr Gly Arg Ala Arg Asn Asp Ala Thr Arg Asp Val Ile Asn Asn
        500             505             510
Val Ser Thr Pro Ala Leu Thr Arg Ser Val Pro Arg Ala Arg Thr Glu
    515             520             525
Ala Arg Gly Pro Glu Lys Thr Asp Gln Ala Leu Ala Arg Val Ile Ser
    530             535             540
Gly Asn Ser Arg Thr Leu Gly Asp Val Tyr Ser Gln Val Ser Ala Leu
545             550             555             560
Gln Ser Val Met Gln Ile Ile Gln Ser Asn Pro Gln Ala Asn Asn Glu
            565             570             575
Glu Ile Arg Gln Lys Leu Thr Ser Ala Val Thr Lys Pro Pro Gln Phe
            580             585             590
Gly Tyr Pro Tyr Val Gln Leu Ser Asn Asp Ser Thr Gln Lys Phe Ile
        595             600             605
Ala Lys Leu Glu Ser Leu Phe Ala Glu Gly Ser Arg Thr Ala Ala Glu
    610             615             620
Ile Lys Ala Leu Ser Phe Glu Thr Asn Ser Leu Phe Ile Gln Gln Val
625             630             635             640
Leu Val Asn Ile Gly Ser Leu Tyr Ser Gly Tyr Leu Gln
            645             650


        <210> 731
        <211> 438
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 731
Pro Ala Trp Ser Ser Val Ser Thr Leu Asn Ile Asp Thr Lys Asp Thr
1               5               10              15
Met Lys Lys Gln Val Tyr Gln Trp Leu Ala Ser Val Val Leu Leu Ala
            20              25              30
Leu Thr Ile Ser Gly Tyr Ala Glu Leu Pro Leu Ser Glu Gln Lys Val
        35              40              45
Lys Ser His Thr Tyr Thr Thr Leu Asp Glu Val Lys Asp Tyr Leu Ser
    50              55              60
Lys Arg Gly Phe Val Glu Thr Arg Lys Gln Asp Gly Val Leu Arg Ile
65              70              75              80
Ala Gly Asp Val Arg Ala Arg Trp Leu Tyr Phe Arg Glu Asp Ile Lys
            85              90              95
Asn Pro Ser Asp Lys Asp Lys Tyr Asn Pro Leu Pro Val Asn Arg Tyr
        100             105             110
Arg Ser Glu Phe Tyr Leu Tyr Ile Asp Tyr Arg Ala Glu Arg Asn Trp
    115             120             125
Leu Ser Ser Lys Met Asn Trp Thr Ala Ile Ala Gly Gly Glu Asn Thr
    130             135             140
Ala Ala Gly Val Asp Ile Asn Arg Ala Phe Leu Gly Tyr Arg Phe Tyr
145             150             155             160
```

954

```
Lys Asn Pro Glu Thr Arg Thr Asp Phe Phe Met Glu Ile Gly Arg Ser
                165                     170                 175
Gly Leu Gly Asp Leu Phe Glu Ser Glu Val Gln Phe Gln Ser Asn Phe
            180                 185                 190
Asp Gly Leu His Ile Tyr Trp Thr Arg Glu Leu Ser Lys Asp Tyr Pro
        195                 200                 205
Tyr Gln Val Ile Val His Gly Gly Pro Phe Val Val Asn Met Thr Lys
    210                 215                 220
Lys His Tyr Ala Trp Val Val Glu Gly Ile Leu Asn Arg Leu Pro Lys
225                 230                 235                 240
Gln Phe Phe Val Lys Cys Ser Val Val Asp Trp Asn Thr Phe Val Pro
                245                 250                 255
Ser Glu Thr Ser Thr Thr Glu Lys Ala Ala Thr Asn Ala Met Lys Tyr
                260                 265                 270
Lys Tyr Cys Val Trp Gln Trp Leu Val Gly Lys His Ser Gln Val Pro
            275                 280                 285
Trp Ile Asn Gly Gln Lys Lys Pro Leu Tyr Leu Tyr Gly Ala Phe Leu
        290                 295                 300
Met Asn Pro Leu Ala Lys Ala Thr Lys Thr Thr Leu Asn Gly Lys Glu
305                 310                 315                 320
Asn Leu Ala Trp Phe Ile Gly Gly Thr Leu Gly Gly Leu Arg Lys Ala
                325                 330                 335
Gly Asp Trp Ser Ala Thr Val Arg Tyr Glu Tyr Val Glu Ala Leu Ser
            340                 345                 350
Val Pro Glu Ile Asp Val Ser Gly Ile Gly Arg Gly Asn Leu Leu Lys
            355                 360                 365
Phe Trp Phe Ala Gln Ala Ile Ala Ala Asn Tyr Asp Pro Lys Glu Ala
    370                 375                 380
Asn Gly Phe Thr Asn Tyr Lys Gly Phe Ser Ala Leu Tyr Met Tyr Gly
385                 390                 395                 400
Ile Thr Asp Ser Leu Ser Phe Arg Ala Tyr Gly Ala Tyr Ser Lys Pro
            405                 410                 415
Ala Asn Asp Lys Leu Gly Ser Asp Phe Thr Phe Arg Lys Phe Asp Leu
            420                 425                 430
Gly Ile Ile Ser Ala Phe
            435


        <210> 732
        <211> 558
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 732
Ser Cys Phe Lys Gly Gly Gly Glu Asn Gly Leu Met Ser Arg Lys Asp
1                   5                   10                  15
Asn Glu Val Ser Leu Ala Arg Ser Ile Phe Asn Ile Leu Ser Gly Thr
            20                  25                  30
Phe Cys Ser Arg Ile Thr Gly Ile Phe Arg Glu Ile Ala Met Ala Thr
        35                  40                  45
Tyr Phe Gly Ala Asp Pro Ile Val Ala Ala Phe Trp Leu Gly Phe Arg
    50                  55                  60
Thr Val Phe Phe Leu Arg Lys Ile Leu Gly Gly Leu Ile Leu Glu Gln
65                  70                  75                  80
Ala Phe Ile Pro His Phe Glu Phe Leu Arg Ala Gln Ser Leu Asp Arg
                85                  90                  95
Ala Ala Phe Phe Phe Arg Arg Phe Ser Arg Leu Ile Lys Gly Ser Thr
            100                 105                 110
Ile Ile Phe Thr Leu Leu Ile Glu Ala Val Leu Trp Val Val Leu Gln
        115                 120                 125
Tyr Val Glu Glu Gly Thr Tyr Asp Met Ile Leu Leu Thr Met Ile Leu
    130                 135                 140
```

```
Leu Pro Cys Gly Ile Phe Leu Met Met Tyr Asn Val Asn Gly Ala Leu
145             150             155             160
Leu His Cys Glu Asn Lys Phe Phe Gly Val Gly Leu Ala Pro Val Val
                165             170             175
Val Asn Ile Ile Trp Ile Phe Phe Val Ile Ala Ala Arg His Ser Asp
                180             185             190
Pro Arg Glu Arg Ile Ile Gly Leu Ser Val Ala Leu Val Ile Gly Phe
            195             200             205
Phe Phe Glu Trp Leu Ile Thr Val Pro Gly Val Trp Lys Phe Leu Leu
    210                 215             220
Glu Ala Lys Ser Pro Pro Gln Glu His Asp Ser Val Arg Ala Leu Leu
225                 230             235             240
Ala Pro Leu Ser Leu Gly Ile Leu Thr Ser Ser Ile Phe Gln Leu Asn
                245             250             255
Leu Leu Ser Asp Ile Cys Leu Ala Arg Tyr Val His Glu Ile Gly Pro
                260             265             270
Leu Tyr Leu Met Tyr Ser Leu Lys Ile Tyr Gln Leu Pro Ile His Leu
    275             280             285
Phe Gly Phe Gly Val Phe Thr Val Leu Leu Pro Ala Ile Ser Arg Cys
    290             295             300
Val Gln Arg Glu Asp His Glu Arg Gly Leu Lys Leu Met Lys Phe Val
305             310             315             320
Leu Thr Leu Thr Met Ser Val Met Ile Ile Met Thr Ala Gly Leu Leu
            325             330             335
Leu Leu Ala Leu Pro Gly Val Arg Val Leu Tyr Glu His Gly Leu Phe
            340             345             350
Pro Gln Ser Ala Val Tyr Ala Ile Val Arg Val Leu Arg Gly Tyr Gly
            355             360             365
Ala Ser Ile Ile Pro Met Ala Leu Ala Pro Leu Val Ser Val Leu Phe
370             375             380
Tyr Ala Gln Arg Gln Tyr Ala Val Pro Leu Phe Ile Gly Ile Gly Thr
385             390             395             400
Ala Leu Ala Asn Ile Val Leu Ser Leu Val Leu Gly Arg Trp Val Leu
            405             410             415
Lys Asp Val Ser Gly Ile Ser Tyr Ala Thr Ser Ile Thr Ala Trp Val
            420             425             430
Gln Leu Tyr Phe Leu Trp Tyr Tyr Ser Ser Lys Arg Leu Pro Met Tyr
    435             440             445
Ser Lys Leu Leu Trp Glu Ser Ile Arg Arg Ser Ile Lys Val Met Gly
    450             455             460
Thr Thr Met Leu Ala Cys Met Ile Thr Leu Gly Leu Asn Ile Leu Thr
465             470             475             480
Gln Thr Thr Tyr Val Ile Phe Leu Asn Pro Leu Thr Pro Leu Ala Trp
                485             490             495
Pro Leu Ser Ser Ile Thr Ala Gln Ala Ile Ala Phe Leu Ser Glu Ser
            500             505             510
Cys Ile Phe Leu Ala Phe Leu Phe Gly Phe Ala Lys Leu Leu Arg Val
    515             520             525
Glu Asp Leu Ile Asn Leu Ala Ser Phe Glu Tyr Trp Arg Gly Gln Arg
    530             535             540
Gly Leu Leu Gln Arg Gln His Val Met Gln Asp Thr Gln Asn
545                 550             555
```

```
Val Ala Ile Ala Ile Ser Arg Asn Ile Pro Val Ile Arg Leu Gln Lys
1           5           10              15
```

Val Pro Asp Asn Ile Leu Lys Ile Glu Arg Ala Lys Glu Thr Ser Leu
        20   25   30
Met Ser Phe Leu Leu Ile Lys Pro Phe Ser Pro Pro Pro Leu Lys Gln
        35   40   45
Asp Tyr Leu Phe Asp Ile Ser Pro Tyr Thr Ser Ser Glu Ile Thr Ile
        50   55   60
Gly Gly Ser Tyr Phe Lys Leu Asn Lys Ala Ser Leu Gln Ser Ser Thr
65   70   75   80
Leu Arg Leu Arg Ser Ile Ser Ile Ile Ser
              85   90

        <210> 734
        <211> 295
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 734
Asn Phe Met Lys Val Leu Pro Pro Pro Ser Ile Pro Leu Leu Gly Ala
 1   5   10   15
His Thr Ser Thr Ala Gly Gly Leu Lys Asn Ala Ile Tyr Glu Gly Arg
        20   25   30
Asp Ile Gly Ala Ser Thr Val Gln Ile Phe Thr Ala Asn Gln Arg Gln
        35   40   45
Trp Gln Arg Arg Ala Leu Lys Glu Glu Val Ile Glu Asp Phe Lys Ala
        50   55   60
Ala Leu Lys Glu Thr Asp Leu Ser Tyr Ile Met Ser His Ala Gly Tyr
65   70   75   80
Leu Ile Asn Pro Gly Ala Pro Asp Pro Val Ile Leu Glu Lys Ser Arg
              85   90   95
Ile Gly Ile Tyr Gln Glu Ile Leu Asp Cys Ile Thr Leu Gly Ile Ser
            100   105   110
Phe Val Asn Phe His Pro Gly Ala Ala Leu Lys Ser Ser Lys Glu Asp
        115   120   125
Cys Met Asn Lys Ile Val Ser Ser Phe Ser Gln Ser Ala Pro Leu Phe
        130   135   140
Asp Ser Ser Pro Pro Leu Val Val Leu Leu Glu Thr Thr Ala Gly Gln
145   150   155   160
Gly Thr Leu Ile Gly Ser Asn Phe Glu Glu Leu Gly Tyr Leu Val Gln
            165   170   175
Asn Leu Lys Asn Gln Ile Pro Ile Gly Val Cys Val Asp Thr Cys His
        180   185   190
Ile Phe Ala Ala Gly Tyr Asp Ile Thr Ser Pro Gln Gly Trp Glu Asp
        195   200   205
Val Leu Asn Glu Phe Asp Glu Tyr Val Gly Leu Ser Tyr Leu Arg Ala
210   215   220
Phe His Leu Asn Asp Ser Met Phe Pro Leu Gly Ala Asn Lys Asp Arg
225   230   235   240
His Ala Pro Leu Gly Glu Gly Tyr Ile Gly Lys Glu Ser Phe Lys Phe
            245   250   255
Leu Met Thr Asp Glu Arg Thr Arg Lys Ile Pro Lys Tyr Leu Glu Thr
            260   265   270
Pro Gly Gly Pro Glu Asn Trp Gln Lys Glu Ile Gly Glu Leu Leu Lys
            275   280   285
Phe Ser Lys Asn Arg Asp Ser
290   295

        <210> 735
        <211> 213
        <212> PRT
        <213> Chlamydia pneumoniae

957

<400> 735

```
Gly Leu Lys Tyr Met Ala Arg Tyr Cys Gly Pro Lys Asn Arg Val Ala
1               5                   10              15
Arg Arg Phe Gly Ala Asn Ile Phe Gly Arg Ser Arg Asn Pro Leu Leu
            20                  25              30
Lys Lys Pro His Pro Pro Gly Gln His Gly Met Gln Arg Lys Lys Lys
        35              40                  45
Ser Asp Tyr Gly Leu Gln Leu Glu Glu Lys Gln Lys Leu Lys Ala Cys
    50              55              60
Tyr Gly Met Ile Met Glu Lys Gln Leu Val Lys Ala Phe Lys Glu Val
65              70              75              80
Ile His Lys Gln Gly Asn Val Ala Gln Met Phe Leu Glu Arg Phe Glu
            85              90                  95
Cys Arg Leu Asp Asn Met Val Tyr Arg Met Gly Phe Ala Lys Thr Ile
        100             105             110
Phe Ala Ala Gln Gln Leu Val Ala His Gly His Ile Leu Val Asn Gly
        115             120             125
Arg Arg Val Asp Arg Arg Ser Phe Phe Leu Arg Pro Gly Met Gln Ile
    130             135             140
Ser Leu Lys Glu Lys Ser Lys Arg Leu Gln Ser Val Lys Asp Ala Leu
145             150             155             160
Glu Ser Lys Asp Glu Ser Ser Leu Pro Ser Tyr Ile Ser Leu Asp Lys
            165             170             175
Thr Gly Phe Lys Gly Glu Leu Leu Val Ser Pro Glu Gln Asp Gln Ile
            180             185             190
Glu Ala Gln Leu Pro Leu Pro Ile Asn Ile Ser Val Val Cys Glu Phe
    195             200             205
Leu Ser His Arg Thr
    210
```

<210> 736
<211> 351
<212> PRT
<213> Chlamydia pneumoniae

<400> 736

```
Gln Asn Thr Lys Glu His Phe Ser Ser Asn Gly Asn Phe Leu Gln Cys
1               5                   10              15
Asn Tyr Phe Gln Asp Tyr Val Arg Val Phe Ile Met Glu Lys Lys Tyr
            20                  25              30
Tyr Ala Leu Ala Tyr Tyr Tyr Ile Thr Arg Val Asp Asn Pro His Glu
        35              40                  45
Glu Ile Ala Leu His Lys Lys Phe Leu Glu Asp Leu Asp Val Ser Cys
    50              55              60
Arg Ile Tyr Ile Ser Glu Gln Gly Ile Asn Gly Gln Phe Ser Gly Tyr
65              70              75              80
Glu Pro His Ala Glu Leu Tyr Met Gln Trp Leu Lys Glu Arg Pro Asn
            85              90                  95
Phe Ser Lys Ile Lys Phe Lys Ile His Ile Lys Glu Asn Ile Phe
        100             105             110
Pro Arg Ile Thr Val Lys Tyr Arg Lys Glu Leu Ala Ala Leu Gly Cys
    115             120             125
Glu Val Asp Leu Ser Lys Gln Ala Lys His Ile Ser Pro Gln Glu Trp
    130             135             140
His Glu Lys Leu Gln Glu Asn Arg Cys Leu Ile Leu Asp Val Arg Asn
145             150             155             160
Asn Tyr Glu Trp Lys Ile Gly His Phe Asp Asn Ala Thr Leu Pro Asp
            165             170             175
Ile Gln Thr Phe Arg Glu Phe Pro Glu Tyr Ala Glu Lys Leu Ala Gln
            180             185             190
```

958

```
Glu Cys Asp Pro Glu Thr Thr Pro Val Met Met Tyr Cys Thr Gly Gly
        195                 200                 205
Ile Arg Cys Glu Leu Tyr Ser Pro Val Leu Leu Glu Lys Gly Phe Lys
        210                 215                 220
Glu Val Tyr Gln Leu Asp Gly Gly Val Ile Ala Tyr Gly Gln Gln Val
225                 230                 235                 240
Gly Thr Gly Lys Trp Leu Gly Lys Leu Phe Val Phe Asp Asp Arg Leu
                245                 250                 255
Ala Ile Pro Ile Asp Glu Ser Asp Pro Asp Val Ala Pro Ile Ala Glu
                260                 265                 270
Cys Cys His Cys Gln Thr Pro Ser Asp Ala Tyr Tyr Asn Cys Ala Asn
        275                 280                 285
Thr Asp Cys Asn Ala Leu Phe Leu Cys Cys Asp Glu Cys Ile His Gln
        290                 295                 300
His Gln Gly Cys Cys Gly Glu Glu Cys Ser Gln Ser Pro Arg Val Arg
305                 310                 315                 320
Lys Phe Asp Ser Ser Arg Gly Asn Lys Pro Phe Arg Arg Ala His Leu
                325                 330                 335
Cys Glu Ile Ser Glu Asn Ser Glu Ser Ala Ser Cys Cys Leu Ile
                340                 345                 350


        <210> 737
        <211> 226
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 737
Gly Glu Lys Phe Met Leu Met Met Leu Met Met Ile Ile Gly Ile Thr
1                 5                   10                  15
Gly Gly Ser Gly Ala Gly Lys Thr Thr Leu Thr Gln Asn Ile Lys Glu
                20                  25                  30
Ile Phe Gly Glu Asp Val Ser Val Ile Cys Gln Asp Asn Tyr Tyr Lys
        35                  40                  45
Asp Arg Ser His Tyr Thr Pro Glu Glu Arg Ala Asn Leu Ile Trp Asp
        50                  55                  60
His Pro Asp Ala Phe Asp Asn Asp Leu Leu Ile Ser Asp Ile Lys Arg
65                  70                  75                  80
Leu Lys Asn Asn Glu Ile Val Gln Ala Pro Val Phe Asp Phe Val Leu
                85                  90                  95
Gly Asn Arg Ser Lys Thr Glu Ile Glu Thr Ile Tyr Pro Ser Lys Val
                100                 105                 110
Ile Leu Val Glu Gly Ile Leu Val Phe Glu Asn Gln Glu Leu Arg Asp
        115                 120                 125
Leu Met Asp Ile Arg Ile Phe Val Asp Thr Asp Ala Asp Glu Arg Ile
        130                 135                 140
Leu Arg Arg Met Val Arg Asp Val Gln Glu Gln Gly Asp Ser Val Asp
145                 150                 155                 160
Cys Ile Met Ser Arg Tyr Leu Ser Met Val Lys Pro Met His Glu Lys
                165                 170                 175
Phe Ile Glu Pro Thr Arg Lys Tyr Ala Asp Ile Ile Val His Gly Asn
                180                 185                 190
Tyr Arg Gln Asn Val Val Thr Asn Ile Leu Ser Gln Lys Ile Lys Asn
        195                 200                 205
His Leu Glu Asn Ala Leu Glu Ser Asp Glu Thr Tyr Tyr Met Val Asn
        210                 215                 220
Ser Lys
225
```

<210> 738
<211> 580
<212> PRT
<213> Chlamydia pneumoniae

<400> 738

```
Arg Gly Glu Leu Leu Lys Leu Ala Arg Gln Cys Leu Val Ala Phe Met
1               5                   10                  15
Thr Val Ser Val Lys Lys Lys Ser Phe Arg Ala Leu Val Thr Thr His
            20                  25                  30
Phe Leu Thr Ile Ile Asn Asp Asn Leu Tyr Lys Phe Leu Leu Ala Phe
            35                  40                  45
Phe Leu Leu Glu Gly Lys Thr Leu Thr Glu Asn Ala Lys Ile Leu Ser
        50                  55                  60
Cys Val Ser Phe Phe Phe Ala Leu Pro Phe Leu Leu Leu Ala Pro Leu
65                  70                  75                  80
Ala Gly Ser Leu Ala Asp Arg Phe Gln Lys Arg Asn Ile Ile Leu Ala
                85                  90                  95
Thr Arg Phe Ile Glu Ile Leu Cys Thr Ile Leu Gly Thr Tyr Phe Phe
            100                 105                 110
Phe Ile Gln Ser Val Val Gly Gly Tyr Val Val Leu Ile Leu Met Ala
            115                 120                 125
Cys His Thr Thr Ile Phe Gly Pro Ala Lys Leu Gly Ile Leu Pro Glu
        130                 135                 140
Met Leu Pro Ser Glu Gln Leu Ser Gln Ala Asn Gly Ile Met Thr Ala
145                 150                 155                 160
Ala Thr Tyr Thr Gly Ser Ile Leu Gly Ser Cys Leu Ala Pro Leu Leu
                165                 170                 175
Val Asp Val Thr His Arg Leu Gly Val Asn Ser Tyr Val Trp Pro Thr
            180                 185                 190
Leu Met Cys Val Ile Val Ser Ile Ile Ser Thr Leu Ile Ser Phe Cys
            195                 200                 205
Ile Arg Pro Ser Asn Val Lys Asn Val Lys Gln Lys Ile Thr Leu Val
        210                 215                 220
Ser Phe Lys Asp Leu Trp Lys Val Leu Lys Asp Thr Arg Met Ile His
225                 230                 235                 240
Tyr Leu Thr Val Ser Ile Phe Leu Gly Ser Phe Phe Leu Leu Ile Gly
                245                 250                 255
Ala Tyr Thr Gln Leu Glu Ile Ile Pro Phe Val Glu Phe Thr Leu Lys
            260                 265                 270
Tyr Pro Lys His Tyr Gly Ala Tyr Leu Phe Pro Ile Val Ala Leu Gly
            275                 280                 285
Val Gly Thr Gly Ser Tyr Ile Thr Gly Lys Ile Ser Gly Lys Asp Ile
        290                 295                 300
Lys Ile Gly Tyr Val Pro Leu Ala Ala Ile Gly Leu Ala Leu Val Phe
305                 310                 315                 320
Met Gly Leu Tyr Ala Phe Ala Cys Ser Ile Leu Phe Val Leu Phe Phe
                325                 330                 335
Leu Leu Ala Leu Gly Phe Leu Gly Gly Val Tyr Gln Val Pro Leu His
            340                 345                 350
Ala Tyr Val Gln Tyr Ala Ser Pro Glu His Lys Arg Gly Gln Ile Leu
            355                 360                 365
Ala Ala Asn Asn Phe Leu Asp Phe Phe Gly Val Leu Val Ala Ala Gly
        370                 375                 380
Val Ile Arg Val Leu Gly Ser Asn Leu Gly Leu Ser Pro Glu Thr Ser
385                 390                 395                 400
Phe Phe Tyr Ile Gly Trp Phe Val Leu Ala Val Ser Ile Trp Thr Leu
                405                 410                 415
Trp Ile Trp Arg Glu His Val Tyr Arg Leu Leu Leu Gly Ile Ile Leu
            420                 425                 430
```

```
Arg Arg Gln Leu Gly Tyr Tyr Leu Lys Ile His Gln Ser Ser Ser Pro
        435                 440             445
Lys Cys Tyr Phe Val Ala Val Gln Ser Tyr Arg Glu Ile Arg Arg Val
        450                 455             460
Leu Ala Ala Leu Thr Lys Thr Val Arg Ser Arg Val Ile Ile Leu Asp
465                 470             475                 480
Gln Lys Leu Val Pro Gly Trp Arg Ala Trp Leu Leu Ser Trp Cys Val
                485             490                 495
Pro Thr Val Val Ser Ser Val Arg Asp Asn Asp Ser Glu Ala Gln Asp
                500             505             510
Ala Trp Ala Val Leu Gln Ala Asn His Leu Lys Thr Ser Leu Lys Lys
        515             520             525
Phe Pro Asp Val Ser Val Val Cys Leu Gly Leu Pro Lys Asn Val Glu
        530             535             540
Arg Phe Thr Ser Ile Leu Gln Glu Gln Gly Ile Asp Leu His Pro Ile
545             550             555                 560
Gln Leu Val Gln Lys Glu Gly Lys Lys Arg Val Ile Tyr Thr Leu Val
                565             570             575
Phe Pro His Ala
            580


        <210> 739
        <211> 1096
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 739
Lys Arg Ser Ala Lys Leu Pro Ala Ser Gly Ala Ser Lys Arg Lys Gly
1               5               10                  15
Arg Ala Lys Lys Lys Leu Thr Gln Glu Arg Ile Phe Ala Phe Ser Val
            20              25              30
Arg Val Leu Pro Ser Asn Arg Lys Asn Ala Lys Arg Asn Leu Tyr Lys
        35              40              45
Leu Ser Phe Ile Ile Val Arg Lys Cys Val Val Thr Ser Ala Leu Asn
        50              55              60
Asp Phe Phe Leu Thr Glu Thr Val Met Asn Ala Thr Lys His Cys Arg
65              70              75                  80
Ala Ser Phe Ser Asn Ser Pro Arg His Leu Leu Ala Gln Leu Ala Glu
            85              90                  95
Asp Ile Thr Ser Thr His Gln Lys Pro Phe Thr Lys Arg Trp Ile Leu
            100             105             110
Val Ala Asn Ala Thr Thr Gly His Trp Ile Lys Asn Gln Leu Val His
        115             120             125
Val Leu Ser Asp His Ile Phe Met Gly Ser Thr Ile Phe Thr Ala Ser
        130             135             140
Asp Ser Ile Val Lys His Leu Phe Leu Gly Ser Gly Cys Ser Gln Pro
145             150             155             160
Asn Ile Pro Asp Tyr Leu Thr Leu Pro Leu Leu Ile Asn Asn Ile Leu
                165             170             175
Glu Glu Ile Ser Lys Ala Ser Lys Phe Glu Asn Gly Arg Glu Phe Leu
            180             185             190
Ser Pro Pro Thr Tyr Glu Thr Thr Lys Lys Leu Ala Ala Ala Phe Lys
        195             200             205
Gln Phe His Thr Phe Ser Gln Arg Pro Thr Lys Asn Ala Ser His Tyr
        210             215             220
Gln Glu Leu Phe Gln Ile Leu Glu Ser His Phe Ser Ser Tyr Glu Glu
225             230             235             240
Met Phe Thr Thr Ile Leu Asn Asn Arg Thr Gln Glu Glu Asp Cys Ser
            245             250             255
Leu His Ile Phe Gly Tyr Ala His Leu Pro Lys His Leu Ala Glu Phe
            260             265             270
```

```
Phe Ile Asn Leu Ser Thr Tyr Phe Pro Val Tyr Phe Tyr Cys Phe Ser
        275                 280                 285
Pro Cys Arg Glu Tyr Phe Gly Asp Leu Leu Ser Asp Arg Ala Ile Asp
        290                 295                 300
Phe Phe Trp Asn Gln Leu Pro Asp Ser Pro Ile Lys Asn Ala Trp Glu
305                 310                 315                 320
His Tyr Val Leu Ser Asp Arg Gln Ala Leu Leu Ala Asn Leu Ala His
                325                 330                 335
Lys Ser Gln Ser Ser Gln Asn Phe Phe Leu Asp Arg Glu Ile Asp Tyr
                340                 345                 350
Gln Glu Met Phe Leu Pro Ser Lys His Asp Ser Ser Leu Gly Val Ile
                355                 360                 365
Gln Asn Ser Ile Leu Asp Leu Lys Pro Thr Ser Pro Gln Asp Phe Ser
        370                 375                 380
Gln Thr Lys Gln Thr Ile Cys Ile Tyr Arg Ala Leu Asn Ile Pro Arg
385                 390                 395                 400
Glu Val Gln Glu Val Phe Cys Lys Val Thr Glu Leu Leu His Arg Gly
                405                 410                 415
Val Ser Pro Glu Glu Ile Phe Ile Leu Ser Ser His Ile Glu Ser Tyr
        420                 425                 430
Lys Val His Leu Asn Ala Ile Phe Asn Pro His Val Pro Ile Tyr Phe
        435                 440                 445
Thr Asp Glu Val Asp Pro Arg Ala Glu Asp Leu Arg Asn Lys Ile Leu
        450                 455                 460
Leu Leu Ser Ser Ile Leu Gln Thr Gln Gly Asp Leu His Tyr Ile Leu
465                 470                 475                 480
Gln Leu Leu Thr His Pro Gln Leu Gln Gln Pro Ile Asp Gln Asn Lys
                485                 490                 495
Val Pro Tyr Leu Ile Lys Lys Leu Ser Ser Glu Trp Gly Lys Ile Ser
        500                 505                 510
Ser Lys Asp Arg Ala Ser Gly Gln Gln Met Lys Ala Leu Gly Asp Leu
        515                 520                 525
Ile Leu Glu Glu Tyr Pro Phe His Gln Glu Gly Gly Arg Val Ser Gln
        530                 535                 540
Val Glu Val Trp Glu Thr Thr Val Pro Leu Ile Tyr Phe Ile Gln Glu
545                 550                 555                 560
Arg Ile Asn Leu Tyr Leu Ser Ser Ser Gln His Ser Tyr Glu Asp Leu
                565                 570                 575
Phe Gln Asn Val Phe Ser Cys Leu Glu Lys Ile Phe Val Leu Ser Pro
        580                 585                 590
Glu Glu Thr Ser Phe Ile Thr Thr Leu Arg Asn Ser Leu Phe Pro Thr
        595                 600                 605
Phe Ala Thr Ser Ser Cys Ser Leu Leu Phe Phe Thr Asp Phe Cys Leu
610                 615                 620
Asp Phe Leu Leu His Phe His Lys Pro Ser Pro Leu Tyr Asp Lys Pro
625                 630                 635                 640
Gly Pro Tyr Ile Gly Ser Leu Ser Ser Leu Ser Leu Ile Pro Lys Gly
                645                 650                 655
Tyr Val Phe Ile Leu Gly Ala Asn Lys Thr Thr Ser Ser Asp Ile Phe
                660                 665                 670
Asp Leu Leu Asn Arg Thr Thr Thr His Glu Glu Leu Ala Phe Ser Ser
        675                 680                 685
Thr Glu Asp Glu Glu Asn Phe His Phe Leu Gln Ile Leu Val Ser Thr
        690                 695                 700
Lys His Glu Leu His Ile Ser Tyr Ile Ser Ser Ala Ala Gln Phe Asn
705                 710                 715                 720
Leu Pro Ser Pro Phe Leu Asn His Ile Lys Glu Thr Leu Asp Leu Pro
                725                 730                 735
Val Glu Thr Leu Pro Thr Gln Pro Tyr Leu Ser Ala Phe Phe Lys Asn
                740                 745                 750
```

962

```
Lys Ala Cys Leu His Thr Ser Gln Glu Tyr Asn Tyr Ser Leu Ala His
        755                 760                 765
Ala Phe Tyr Ser Lys Lys Ala Leu Leu Pro Ser Leu Phe Ile Pro Thr
        770                 775                 780
Val Lys Gln Val Asn Leu Pro Gln His Leu Ser Leu Asn Glu Ile Ile
785                 790                 795                 800
Lys Gly Ile Phe Ser Pro Leu Asp Leu Phe Leu Lys Thr Asn Tyr Asn
                805                 810                 815
Leu Arg Ile Ser Tyr Pro Glu His Leu Lys Lys Gln Gln Lys Leu Phe
            820                 825                 830
Pro Thr Lys His Gln Ile Glu Asp Phe Trp Asn Glu Cys Phe Val Asp
            835                 840                 845
Lys Glu His Asp Leu Ile Pro Ser Ile Ser Pro His Ala Glu Glu Leu
    850                 855                 860
Phe Thr Tyr Tyr Arg Glu Lys Thr Ile Leu Leu Arg Asn Gly Leu Asp
865                 870                 875                 880
Lys Asp Pro Lys His Ser Pro Tyr Thr Val Thr Phe Ser Ser Ser Ile
                885                 890                 895
Phe Glu Glu Arg Pro Tyr His Glu Ser Tyr Leu Phe Pro Pro Leu Ser
            900                 905                 910
Leu Ser Phe Gln Gly Asn Pro Val Gln Ile His Gly Thr Ile His Gly
        915                 920                 925
Val Cys Asn Glu Gly Leu Tyr Leu Cys Ser Ile Asp Pro Arg Asp Ser
    930                 935                 940
Leu Lys Lys Thr Thr Arg Thr Leu Gly Ser Leu Pro Glu Thr Ser Ser
945                 950                 955                 960
Glu Gln Lys Gln Leu Leu Glu Arg Tyr Val Ala Leu Ala Val Leu Gln
                965                 970                 975
Met Ser Gln His Leu Ser Ser Asp Ser Ala Leu Ile Lys Leu Thr Ser
            980                 985                 990
Phe Asn Thr Lys Glu Asn His His Pro Pro Phe Ser Asp Pro Glu Gly
    995                 1000                1005
Tyr Leu Arg Lys Val Leu Glu Val Tyr His Leu Met Ser Ser Gln Pro
    1010                1015                1020
Ile Pro Leu Leu Ser Pro Leu Cys Trp Lys Thr Leu Asp Asp Glu Glu
1025                1030                1035                1040
Lys Phe His Gln Ala Val Leu Ser Ala Ile Ser Glu Glu Ala Lys Asn
                1045                1050                1055
Pro Ser Leu Pro Ile Phe Trp Gln Phe His Asn Arg Asn Ile Glu Glu
            1060                1065                1070
Ile Leu Asn His Val Gly Ala Ser Glu Arg Leu Lys Ile Leu Ser Leu
        1075                1080                1085
Phe Arg Gly Pro Cys Glu Ala Val
    1090                1095
```

        <210> 740
        <211> 1060
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 740
```
Lys Phe Tyr Leu Phe Ser Glu Val Pro Val Met Lys Pro Phe Asn Ile
1           5               10                  15
Phe Asp Ser Asn Ser Ser Ile Gln Gly Lys Phe Phe Leu Glu Ala Ser
            20              25                  30
Ala Gly Thr Gly Lys Thr Phe Thr Ile Glu Gln Ile Val Leu Arg Ala
            35              40                  45
Leu Ile Glu Gly Ser Leu Thr His Val Glu His Ala Leu Ala Ile Thr
        50              55                  60
Phe Thr Asn Ala Ser Thr Asn Glu Leu Lys Val Arg Ile Lys Asp Asn
65              70                  75                  80
```

```
Leu Ala Gln Thr Leu Arg Glu Leu Lys Ala Val Leu Asn Ser Gln Pro
                85                  90              95
Ala Ser Leu Pro Thr Tyr Leu Asp Ile Asn Cys Asn Val Lys Gln Ile
               100              105             110
Tyr Met Gln Val Arg Asn Ala Leu Ala Thr Leu Asp Gln Met Ser Leu
        115              120             125
Phe Thr Ile His Gly Phe Cys Asn Phe Val Leu Glu Gln Tyr Phe Pro
    130              135             140
Lys Thr Arg Leu Ile His Lys Asn Pro Ala Leu Thr His Ser Gln Leu
145              150             155                     160
Val Leu His His Ile Thr Asn Tyr Leu Lys Gln Asp Leu Trp Lys Asn
                165             170                 175
Val Leu Phe Gln Glu Gln Phe His Leu Leu Ala Val Arg Tyr Asn Ile
            180             185             190
Thr Ser Lys His Thr Ser Ser Leu Val Asp Lys Leu Leu Ala Ser Tyr
        195             200             205
Thr Gln Pro Ile Ser Ser Tyr Phe Ser Ser Arg Val Glu Arg Leu Glu
    210             215             220
Gln Ile Ser Leu Trp His Gln Gln Ile Tyr Asn Ser Leu Leu Glu Ile
225             230             235                     240
Pro Lys Gln Val Phe Leu Asp Gln Leu Thr Ala His Ile Ser Gly Phe
            245             250             255
Lys Lys Gln Pro Phe Ser Ile Leu Asp Asp Leu His His Phe Val Asp
            260             265             270
Leu Leu Tyr Thr Ser Glu Thr His Ser Ser Leu Phe Ser Phe Phe Lys
        275             280             285
Ile Ala Glu Thr Phe Asn Phe Lys His Arg Leu Ala Arg Tyr Lys Pro
    290             295             300
Cys Ala Ala Phe Thr Val Leu Glu Asn Met Ser Trp Val Glu Arg Thr
305             310             315                     320
Leu Glu Phe Cys Asn Leu Asp Arg Ile Phe Asn Thr Leu Leu Val Asp
            325             330             335
Leu Gln Glu Tyr Leu Lys Gln Asn Tyr Thr Pro Trp Leu Ser Pro Asp
        340             345             350
Glu Ser Val Phe Ala Leu Glu Lys Leu Leu Ser Ser Ser Glu Ala Gln
        355             360             365
Pro Val Val Gln Ala Leu Arg Glu Gln Tyr Gln Leu Val Leu Ile Asp
    370             375             380
Glu Phe Gln Asp Thr Asp Lys Gln Gln Trp Ser Ile Phe Ser Asn Leu
385             390             395                     400
Phe Ile Ser Pro Lys Phe Thr Gly Ser Leu Phe Leu Ile Gly Asp Pro
            405             410             415
Lys Gln Ser Ile Tyr Glu Trp Arg Ser Ala Asp Leu Pro Thr Tyr Leu
            420             425             430
Thr Ala Lys Ser Ser Phe Ser Glu Asp Lys Gln Leu Gln Leu Val Asn
        435             440             445
Asn Tyr Arg Ser Thr Pro Lys Leu Met Glu Ala Ile Asn Gln Ile Phe
    450             455             460
Gly Lys Ile Ser Pro Phe Leu Glu Ile Pro Gly Tyr Leu Pro Ile Glu
465             470             475                     480
Tyr His Ala Leu Asn Pro Gln Ser Ser Glu Thr Phe Glu Asn Pro Pro
            485             490             495
His Ala Pro Ile His Phe Phe Phe Tyr Glu Thr Ile Lys Asp Gln Ala
            500             505             510
Leu Trp Ile Phe Ser Glu Ala Leu Arg Leu Gln Lys Glu Gln Lys Ile
        515             520             525
Pro Leu Gly Asn Met Val Val Leu Val Ser Asp Ser Asn Gln Ala Phe
    530             535             540
Glu Leu Ile Ser Tyr Ala Thr Ile Pro Val Ser Phe Ser Lys Asn Lys
545             550             555                     560
```

964

```
Ser Ile Phe His Leu Thr Glu Thr His Ile Leu Thr Thr Ala Leu Leu
              565           570                     575
Glu Ala Ile Leu His Pro Glu Asn Tyr Glu Lys Ile Ser Lys Ile Leu
              580               585                 590
Phe Ser Ser Leu Phe Gly Leu Ser Leu Asp Glu Val Thr Thr Lys Lys
          595             600             605
Glu Asp Phe Thr Ile Tyr Phe Gln Ser Leu His Ser Tyr Ile Ser His
    610             615             620
His Gly Leu Leu Ala Thr Phe Tyr Arg Val Met Thr Thr Gln Gly Asn
625             630             635                     640
Val Leu Phe Ser Ser Pro Arg Gly Asp Leu Ile Phe Gln Glu Met Glu
              645             650             655
Lys Leu Cys Gly Tyr Leu Asp Thr Ile Ser Ser Tyr Pro Tyr His Gln
              660             665             670
Leu Leu His Leu Lys Asn Phe Ser Glu Thr Gly Arg Trp Glu Glu Glu
              675             680             685
Leu Ala Ile Ser Ser Tyr Ser Glu Asp Leu Glu Thr Leu Lys Ile Thr
              690             695             700
Thr Ile His Ser Ser Lys Gly Leu Glu Tyr Asp Ile Val Phe Cys Pro
705             710             715                     720
Gly Ile Glu Lys Ser Lys Lys Asn Lys Ser Ser Ser Glu Leu Leu Arg
              725             730             735
Glu Met Tyr Val Ala Cys Thr Arg Ala Lys Lys Gln Leu Tyr Leu Pro
              740             745             750
Ile Ser Thr Gln Pro Pro Ser Leu Gln Arg Ser Ser Ala Leu Thr Asn
              755             760             765
Tyr Val Lys Leu Glu Gly Thr Gln Ser Ser Ala Tyr Asp Leu Ala Ile
    770             775             780
His Leu His Gln Glu His Pro Asp Leu Phe Ser Tyr Ser Leu Pro Lys
785             790             795                     800
Asp His Gly His Ala Thr Thr Val Leu Asn Leu Pro Leu Leu Glu Thr
              805             810             815
Phe Ala Leu Lys Val Thr Pro Pro Lys Thr Ile Phe Ser Phe Ser Ser
              820             825             830
Thr Lys Phe Leu Leu Asp Thr His Lys Asp Ser Gln Ser Ile Pro Tyr
              835             840             845
Ser Lys Leu Pro Ile Ser Lys Gln Gln Leu Pro Leu Gly Glu Lys Thr
    850             855             860
Gly Ile Leu Ile His Lys Ile Leu Glu Ser Ile Gln Phe Ser Leu Leu
865             870             875                     880
Gln Asp Thr Glu Tyr Leu Met Ser Thr Ile Met Arg Phe Ile Lys His
              885             890             895
Thr His Leu Glu Gly Phe Glu Glu Thr Ile Leu Lys Leu Leu Ser Lys
              900             905                 910
Thr Phe Phe Ser Pro Leu Thr Phe Ser Ser Gln Thr Phe Ser Leu Ser
          915             920             925
Gln Val Leu Pro Asn Lys Ile Phe Arg Glu Thr Ser Phe Leu Phe Leu
    930             935             940
Glu Asn Gln Glu Leu Trp Gln Gly Val Ile Asp Leu Phe Phe Glu His
945             950             955                     960
Glu Gly Lys Tyr Tyr Ile Ile Asp Trp Lys Thr Ser Phe Leu Gly Glu
              965             970                 975
Thr Asn Ser Asp Tyr Ser Lys Ser Asn Leu Ser Ile Tyr Ile Lys Gln
              980             985             990
Glu Lys Leu Asp Tyr Gln Gly Arg Ile Tyr Val Lys Ala Val Arg Lys
          995             1000            1005
Phe Leu Asn Gln Phe Glu Ile Asp Asp Asp Val Glu Leu Gly Val Ile
    1010            1015            1020
Phe Ile Arg Gly Ile Asp Thr Gln Gly Asn Gly Phe Phe Ala Leu Asn
1025            1030            1035                1040
```

965

Ser Ser Glu Asp Ile Pro Asn Phe Asn Pro Lys Ala Ile Gln Lys Cys
            1045   1050   1055
Gln Ala Tyr His
            1060

        <210> 741
        <211> 344
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 741
Cys Lys Val Leu Phe Lys Leu Met Ser Tyr Ser Leu Arg Asn Lys Lys
1   5   10   15
Thr Lys Ile Cys Val Tyr Ile Ile Ile Ala Leu Gly Ile Leu Ser Phe
            20   25   30
Arg Ser Ile Pro Gln Glu Val Tyr Asp Lys Ile Arg Ser Ser Phe Val
            35   40   45
Ser Leu His Val Lys Phe Phe Pro Lys Ile Lys Gln Ala Pro Ser Ser
        50   55   60
His Leu Ala Asn Leu Glu Leu Glu Asn Leu Val Leu Lys Glu Arg Val
65   70   75   80
Ala Ser Leu Glu Glu Lys Leu Lys Leu Tyr Glu Val Ser Asn His Thr
            85   90   95
Pro Pro Leu Phe Pro Glu Ile Leu Thr Pro Tyr Phe His Lys Leu Val
            100   105   110
Glu Gly Lys Val Val Tyr Arg Asp Tyr Thr His Trp Ser Ser Ser Cys
            115   120   125
Trp Val Asn Val Gly Lys Thr His Gly Ile Lys Lys Asn Ser Pro Val
            130   135   140
Leu Ser Gly Asn Val Leu Val Gly Leu Val Asp Tyr Val Gly Glu His
145   150   155   160
Gln Ser Arg Ile Arg Leu Ile Thr Asp Val Gly Met Lys Pro Ser Val
            165   170   175
Val Ala Met Arg Gly Asp Ile Gln Ser Trp Trp Ile Lys His Ser Leu
            180   185   190
Arg Glu Leu Ile Arg Gln Val Glu Gln Ile Ser His Ala Tyr Ile Leu
            195   200   205
Glu Lys Asp Lys Tyr Glu Lys Ile Ser Gln Leu Gln Glu Leu Asp Ser
            210   215   220
Leu Ile Gln Gly Glu Gly Glu Asn Gln Ala Leu Leu Arg Gly Ile Leu
225   230   235   240
Ser Gly Val Gly Gly Ala Leu Trp Lys Glu Gly Ser Leu Cys Leu Glu
            245   250   255
Gly Glu Gly Phe Tyr Phe Ser Glu Gly Lys Thr Leu Leu Pro Gly Asp
            260   265   270
Ile Leu Val Thr Thr Gly Leu Asp Gly Val Phe Pro Pro Gly Leu Leu
            275   280   285
Val Ala Arg Val Thr Lys Val Lys Ala Pro Arg Asp Gly Ala Cys Thr
            290   295   300
Phe Lys Ile Glu Ala Gln Ser Leu Glu Glu Lys Leu Met Glu Leu Asp
305   310   315   320
Gln Leu Phe Ile Leu Pro Pro Leu Glu Phe Asn Pro Asn Asp Arg Pro
            325   330   335
Asp Ile Phe Gly Leu Leu Trp Asp
            340

        <210> 742
        <211> 397
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 742

Ser Tyr Met Ser Phe Phe Asn His Ile Pro Thr Phe Ser Pro Asp Ala
1   5   10   15
Ile Leu Gly Leu Gln Asn Val Phe Phe Ala Asp Lys Arg Pro Glu Lys
            20   25   30
Val Asn Leu Val Ile Gly Val Tyr Glu His Pro Gln Lys Arg Tyr Gly
        35   40   45
Gly Leu Ser Cys Ile Arg Lys Ala Gln Thr Val Ile Leu Glu Glu Glu
    50   55   60
Gln Asn Lys Ser Tyr Leu Pro Ile Ser Gly Leu Gln Ile Phe Leu Asp
65   70   75   80
Glu Met Arg Glu Leu Val Phe Gly Ala Val Asp Pro Ser Ala Ile Val
            85   90   95
Gly Phe Gln Ser Leu Gly Gly Thr Gly Ala Leu His Leu Gly Ala Arg
            100   105   110
Leu Leu Ser Val Ala Lys Gly Ser Gly Lys Val Tyr Val Pro Glu Gln
            115   120   125
Thr Trp Ser Asn His Ile Arg Ile Phe Ser Gln Glu Gly Leu Glu Val
    130   135   140
Ile Arg Tyr Pro Tyr Tyr Ser Lys Glu Gln Lys Gln Leu Leu Phe Glu
145   150   155   160
Pro Leu Ile Ala Phe Leu Lys Glu Val Glu Lys Asn Ser Val Ile Leu
            165   170   175
Leu His Gly Cys Cys His Asn Pro Thr Gly Val Asp Phe Thr Glu Asp
            180   185   190
Met Trp Lys Glu Leu Ala Ile Leu Met Lys Glu Arg Glu Leu Ile Pro
    195   200   205
Phe Phe Asp Thr Ala Tyr Gln Gly Phe Ala His Gly Ile Glu Leu Asp
    210   215   220
Arg Lys Pro Ile Glu Ile Phe Ile Ser Glu Gly Asn Thr Val Leu Val
225   230   235   240
Ala Ala Ser Ser Ser Lys Asn Phe Ala Leu Tyr Gly Glu Arg Val Gly
            245   250   255
Tyr Phe Ala Val His Ser Thr Phe Thr Asp Glu Leu Val Lys Ile His
    260   265   270
Ser Phe Leu Glu Glu Lys Ile Arg Gly Glu Tyr Ser Ser Pro Gln Arg
    275   280   285
Trp Gly Val Glu Ile Val Ser Thr Ile Leu Ser Asn Pro Tyr Leu Lys
    290   295   300
Glu Glu Trp Gln Ser Glu Leu Asn Phe Ile Arg Glu Ser Leu Gly Lys
305   310   315   320
Met Arg Thr Arg Phe Val Gln Ala Leu Arg Lys Val Ala Gly His Thr
            325   330   335
Phe Asp Phe Leu Leu Ser Gln His Gly Phe Phe Ala Tyr Pro Gly Phe
    340   345   350
Ser Asp Lys Gln Val Leu Phe Leu Arg Glu Gln His Ala Val Tyr Thr
    355   360   365
Thr Ala Gly Gly Arg Met Asn Leu Asn Gly Ile Thr Glu Lys Asn Ile
    370   375   380
Asp His Val Val Gln Ser Phe Ile Gln Ala Tyr Glu Leu
385   390   395

<210> 743
<211> 733
<212> PRT
<213> Chlamydia pneumoniae

<400> 743
Glu Tyr Ile Phe Arg Leu Lys Thr Gly Asp Ile Val Asp Tyr Leu Glu
1   5   10   15

967

```
Lys Leu Gln Val Leu Ile Glu Glu Gly Gln Ser Ala Asn Phe Leu Ser
        20              25                  30
Leu Trp Glu Glu Tyr Cys Phe Asn Asp Val Val Arg Gly Arg Glu Leu
        35              40                  45
Val Glu Ile Leu Glu Lys Val Lys Ser Ser Ser Leu Ala Ser Leu Phe
    50              55                  60
Gly Lys Ile Val Asp Thr Val Val Pro Leu Trp Glu Lys Ile Pro Glu
65              70              75                  80
Gly Lys Asp Lys Asp Arg Val Leu Gln Leu Ile Leu Asp Leu Gln Thr
            85              90                  95
Ser Asn Ser Gln Met Phe Phe Asp Ile Ala Thr Glu Tyr Val Asn Lys
            100             105                 110
Lys Tyr Ser Gly Glu Glu Asn Phe Asn Glu Ala Leu Arg Val Val Gly
    115             120                 125
Leu Arg Asp Gly Arg Asp Phe Gln Phe Ser Leu Ser Arg Phe Asp Phe
    130             135                 140
Leu Met His Met His Lys Gly Asn Phe Val Phe His Gln Gly Gly Trp
145             150                 155                 160
Gly Val Gly Glu Val Met Gly Val Ser Phe Leu Gln Gln Lys Val Leu
                165             170                 175
Ile Glu Phe Glu Gly Ile Met Ser Ala Lys Asp Ile Ser Phe Glu Thr
            180             185                 190
Ala Phe Lys Ser Leu Thr Pro Leu Ser Gly Asp His Phe Leu Ser Arg
            195             200                 205
Arg Phe Gly Asp Pro Asp Gly Phe Glu Ala Phe Ala Lys Glu Asn Pro
    210             215                 220
Ile Glu Val Val Glu Ile Leu Leu Arg Asp Leu Gly Pro Lys Thr Ala
225             230             235                 240
Lys Glu Ile Lys Asp Glu Leu Val Asp Leu Val Ile Pro Glu Ala Asp
            245             250                 255
Trp Asn Arg Trp Trp Gln Ser Ala Lys Thr Lys Ile Lys Lys Gly Thr
            260             265                 270
Arg Ile Ile Ser Pro Asp Asn Pro Lys Glu Pro Tyr Val Leu Ser Asp
    275             280                 285
Ala Gly Cys Ser His Met Gly Gln Leu Glu Arg Lys Leu Gly Leu Ser
    290             295                 300
Leu Asn Ser Ala Glu Lys Ile Ser Leu Ile Tyr His Phe Ile Arg Asp
305             310                 315                 320
Leu His Ser Glu Leu Lys Asn Ile Glu Ile Arg Lys Ser Leu Val Lys
            325             330                 335
Ala Leu Gln Asp Leu Asp Val Glu Glu Gly Asn Lys Ser Leu Ile Leu
            340             345                 350
Gln Arg Glu Leu Leu Leu Ser Glu Tyr Leu Gly Ile Lys Asp Ala Ser
            355             360                 365
Ile Asp Lys Glu Tyr Ile Thr Ser Leu Ser Glu Asp Asp Thr Ser Arg
    370             375                 380
Leu Leu Glu Asn Met Pro Ile Val Ala Leu Gln Lys Ser Phe Leu Ser
385             390                 395                 400
Leu Val Arg Lys Tyr Ser Ser Phe Trp Gln Gln Val Phe Met Gln Ile
            405             410                 415
Leu Leu Tyr Thr Thr Ser Pro Thr Met Arg Asp Phe Val Tyr Lys Thr
            420             425                 430
Ile Lys Asn Asp Pro Ser Ser Val Glu Val Leu Lys Lys Arg Leu Leu
    435             440                 445
Asp Ser Ala His Gln Pro Met Met Phe Pro Glu Leu Phe Val Trp Phe
    450             455                 460
Phe Leu Lys Leu Gly Asn His Glu Asp Gly Leu Phe Asp Pro Glu Asp
465             470                 475                 480
Lys Glu Val Leu Arg Leu Phe Leu Glu Ser Ala Leu Asn Phe Met Tyr
            485             490                 495
```

968

Gln Val Ala Ser Thr Pro His Lys Glu Leu Gly Lys Lys Leu His His
        500   505   510
Tyr Leu Val Gly Gln Arg Tyr Leu Ala Val Arg Gln Met Ile Glu Gly
        515   520   525
Ala Ser Leu Pro Phe Leu Lys Glu Leu Leu Leu Ser Thr Lys Cys
    530   535   540
Pro Gln Phe Ser Ser Ser Asp Leu Asn Val Leu Gln Ser Leu Ala Glu
545   550   555   560
Val Val Gln Pro Thr Leu Lys Lys His Lys Ser Asn Val Glu Glu Glu
                565   570   575
Asn Val Leu Trp Ser Thr Ser Glu Ser Phe Ser Arg Met Lys Ala Lys
            580   585   590
Leu Gln Ser Leu Val Gly Lys Glu Met Val Asp Asn Ala Lys Glu Ile
        595   600   605
Glu Asp Ala Arg Ser Leu Gly Asp Leu Arg Glu Asn Ser Glu Tyr Lys
    610   615   620
Phe Ala Leu Glu Lys Arg Ala Arg Leu Gln Glu Glu Ile Arg Val Leu
625   630   635   640
Ser Glu Glu Ile Asn Arg Ala Arg Ile Leu Thr Lys Asp Leu Val Phe
            645   650   655
Thr Asp Lys Val Gly Val Gly Cys Lys Val Thr Leu Lys Gly Asp Ala
            660   665   670
Gly Glu Val Val Glu Tyr Thr Ile Leu Gly Pro Trp Asp Ala Asp Pro
        675   680   685
Asp Ser Cys Ile Leu Ser Leu Gln Ser Lys Leu Ala Gln Asn Met Leu
    690   695   700
Gly Lys Lys Leu Asn Asp Val Val Ile Leu Gln Gly Lys Glu Tyr Lys
705   710   715   720
Ile Ser Arg Ile Gln Ser Ile Trp Glu Glu His Gly Ala
            725   730

        <210> 744
        <211> 149
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 744
Thr Lys Met Met Val Ile Val Met Asn Ser Lys Ser Ala Gln Lys Ile
1   5   10   15
Ile Asp Ser Ile Lys Gln Ile Leu Thr Ile Tyr Asn Ile Asp Phe Asp
            20   25   30
Pro Ser Phe Gly Ser Ser Leu Ser Ser Asp Ser Asp Ala Asp Tyr Glu
        35   40   45
Tyr Leu Ile Thr Lys Thr Gln Glu Lys Ile Gln Glu Leu Asp Lys Arg
    50   55   60
Ala Gln Glu Ile Leu Thr Gln Thr Gly Met Ser Lys Glu Gln Met Glu
65   70   75   80
Val Phe Ala Asn Asn Pro Asp Asn Phe Ser Pro Glu Glu Trp Leu Ala
            85   90   95
Leu Glu Lys Val Arg Ser Ser Cys Asp Glu Tyr Arg Lys Glu Thr Glu
        100   105   110
Asn Leu Ile Asn Glu Ile Thr Leu Asp Leu His Pro Thr Lys Glu Ser
    115   120   125
Lys Arg Pro Lys Gln Lys Leu Ser Ser Thr Lys Lys Asn Lys Lys Lys
130   135   140
Asn Trp Ile Pro Leu
145

<210> 745
<211> 469
<212> PRT
<213> Chlamydia pneumoniae

<400> 745
```
Ile Phe Met Lys Ile Thr Val Asn Arg Gly Leu Asp Leu Ser Leu Gln
1               5                   10                  15
Gly Ser Pro Lys Glu Ser Gly Phe Tyr Asn Lys Ile Asp Pro Glu Phe
            20                  25                  30
Val Ser Ile Asp Leu Arg Pro Phe Gln Pro Leu Ser Leu Lys Leu Lys
        35                  40                  45
Val Glu Gln Gly Asp Ala Val Cys Ser Gly Ala Pro Ile Ala Glu Tyr
    50                  55                  60
Lys His Phe Pro Asn Thr Tyr Ile Thr Ser His Val Ser Gly Val Val
65                  70                  75                  80
Thr Ala Ile Arg Arg Gly Asn Lys Arg Ser Leu Leu Asp Val Ile Ile
                85                  90                  95
Lys Lys Thr Pro Gly Pro Thr Ser Thr Glu Tyr Thr Tyr Asp Leu Gln
            100                 105                 110
Thr Leu Ser Arg Ser Asp Leu Ser Glu Ile Phe Lys Glu Asn Gly Leu
        115                 120                 125
Phe Ala Leu Ile Lys Gln Arg Pro Phe Asp Ile Pro Ala Ile Pro Thr
    130                 135                 140
Gln Thr Pro Arg Asp Val Phe Ile Asn Leu Ala Asp Asn Arg Pro Phe
145                 150                 155                 160
Thr Pro Ser Pro Glu Lys His Leu Ala Leu Phe Ser Ser Arg Glu Glu
                165                 170                 175
Gly Phe Tyr Val Phe Val Val Gly Val Arg Ala Ile Ala Lys Leu Phe
            180                 185                 190
Gly Leu Arg Pro His Ile Val Phe Arg Asp Arg Leu Thr Leu Pro Thr
        195                 200                 205
Gln Glu Leu Lys Thr Ile Ala His Leu His Thr Val Ser Gly Pro Phe
    210                 215                 220
Pro Ser Gly Ser Pro Ser Ile His Ile His Ser Val Ala Pro Ile Thr
225                 230                 235                 240
Asn Glu Lys Glu Val Val Phe Thr Leu Ser Phe Gln Asp Val Leu Thr
                245                 250                 255
Ile Gly His Leu Phe Leu Lys Gly Arg Ile Leu His Glu Gln Val Thr
            260                 265                 270
Ala Leu Ala Gly Thr Ala Leu Lys Ser Ser Leu Arg Arg Tyr Val Ile
        275                 280                 285
Thr Thr Lys Gly Ala Ser Phe Ser Ser Leu Ile Asn Leu Asn Asp Ile
    290                 295                 300
Ser Asp Asn Asp Thr Leu Ile Ser Gly Asp Pro Leu Thr Gly Arg Leu
305                 310                 315                 320
Cys Lys Lys Glu Glu Pro Phe Leu Gly Phe Arg Asp His Ser Ile
                325                 330                 335
Ser Val Leu His Asn Pro Thr Lys Arg Glu Leu Phe Ser Phe Leu Arg
            340                 345                 350
Ile Gly Phe Asn Lys Pro Thr Phe Thr Lys Thr Tyr Leu Ser Gly Phe
        355                 360                 365
Phe Lys Lys Lys Arg Thr Tyr Thr Asn Pro Asp Thr Asn Leu His Gly
    370                 375                 380
Glu Thr Arg Pro Ile Ile Asp Thr Asp Ile Tyr Asp Lys Val Met Pro
385                 390                 395                 400
Met Arg Ile Pro Val Val Pro Leu Ile Lys Ala Val Ile Thr Lys Asn
                405                 410                 415
Phe Asp Leu Ala Asn Glu Leu Gly Phe Leu Glu Val Cys Gly Glu Asp
            420                 425                 430
```

```
Phe Ala Leu Pro Thr Leu Ile Asp Pro Ser Lys Thr Glu Met Leu Thr
        435                 440             445
Ile Val Lys Glu Ser Leu Ile Glu Tyr Ala Lys Glu Ser Gly Ile Leu
        450             455             460
Thr Pro His Gln Asp
465
```

<210> 746
<211> 333
<212> PRT
<213> Chlamydia pneumoniae

<400> 746

```
Glu Met Ser Ser Leu Thr Leu Ser Arg Arg Pro Arg Arg Asn Arg Lys
1               5               10                  15
Thr Ala Ala Ile Arg Asp Leu Leu Ala Glu Thr His Leu Ser Pro Lys
            20              25                  30
Asp Leu Ile Ala Pro Phe Phe Val Lys Tyr Gly Asn Asn Ile Lys Glu
            35              40                  45
Glu Ile Pro Ser Leu Pro Gly Val Phe Arg Trp Ser Leu Asp Leu Leu
        50              55              60
Leu Lys Glu Ile Glu Arg Leu Cys Thr Tyr Gly Leu Arg Ala Val Met
65              70                  75                  80
Leu Phe Pro Ile Ile Pro Asp Asp Leu Lys Asp Ala Tyr Gly Ser Tyr
                85              90                  95
Ser Ser Asn Pro Lys Asn Ile Leu Cys His Ser Ile His Glu Ile Lys
            100             105                 110
Asn Ala Phe Pro His Leu Cys Leu Ile Ser Asp Ile Ala Leu Asp Pro
        115             120                 125
Tyr Thr Thr His Gly His Asp Gly Ile Phe Leu Asn Gly Glu Val Leu
    130             135             140
Asn Asp Glu Ser Val Arg Ile Phe Gly Asn Ile Ala Thr Leu His Ala
145             150                 155                 160
Glu Met Gly Ala Asp Ile Val Ala Pro Ser Asp Met Met Asp Gly Arg
                165                 170                 175
Ile Gly Tyr Ile Arg Ser Lys Leu Asp Gln Ser Gly Tyr Ser Lys Thr
            180             185                 190
Ser Ile Met Ser Tyr Ser Val Lys Tyr Ala Ser Cys Leu Tyr Ser Pro
    195             200                 205
Phe Arg Asp Ala Leu Ser Ser His Val Thr Ser Gly Asp Lys Lys Gln
    210             215                 220
Tyr Gln Met Asn Pro Lys Asn Val Leu Glu Ala Leu Leu Glu Ser Ser
225             230             235                 240
Leu Asp Glu Glu Glu Gly Ala Asp Ile Leu Met Val Lys Pro Ala Gly
            245             250                 255
Leu Tyr Leu Asp Val Ile Tyr Arg Ile Arg Gln Asn Thr Cys Leu Pro
        260             265             270
Leu Ala Ala Tyr Gln Val Ser Gly Glu Tyr Ala Met Ile Leu Ser Ala
        275             280             285
Phe Gln Gln Gly Trp Leu Asp Lys Glu Thr Leu Phe His Glu Ser Leu
    290             295             300
Ile Ala Ile Lys Arg Ala Gly Ala Asp Met Ile Ile Ser Tyr Ser Ala
305             310             315                 320
Pro Phe Ile Leu Glu Leu Leu His Gln Gly Phe Glu Phe
                325             330
```

<210> 747
<211> 54
<212> PRT
<213> Chlamydia pneumoniae

<400> 747

Val Asp Ser Cys Phe Asp Asp Trp Arg Ala Ser Ser Leu Gln Gly Ser
1   5   10   15

Thr Thr Tyr Asn Val Ala Tyr Asp Pro Lys His Thr Leu Ala Tyr Gly
            20   25   30

Phe Cys Asn Gln Val Ser Val Lys Lys Phe His Leu Lys Pro Pro Lys
            35   40   45

Ser Gln Glu Lys Phe Leu
    50

<210> 748
<211> 543
<212> PRT
<213> Chlamydia pneumoniae

<400> 748

Phe Ser Gly Arg Cys Pro Phe Ser Phe Glu Val Phe Met Leu Gly Lys
1   5   10   15

Glu Glu Glu Phe Thr Cys Lys Gln Lys Gln Cys Leu Ser His Phe Val
            20   25   30

Thr Asn Leu Thr Ser Asp Val Phe Ala Leu Lys Asn Leu Pro Glu Val
            35   40   45

Val Lys Gly Ala Leu Phe Ser Lys Tyr Ser Arg Ser Val Leu Gly Leu
    50   55   60

Arg Ala Leu Leu Leu Lys Glu Phe Leu Ser Asn Glu Glu Asp Gly Asp
65   70   75   80

Val Cys Asp Glu Ala Tyr Asp Phe Glu Thr Asp Val Gln Lys Ala Ala
            85   90   95

Asp Phe Tyr Gln Arg Val Leu Asp Asn Phe Gly Asp Asp Ser Val Gly
            100   105   110

Glu Leu Gly Gly Ala His Leu Ala Met Glu Asn Val Ser Ile Leu Ala
    115   120   125

Ala Lys Val Leu Glu Asp Ala Arg Ile Gly Gly Ser Pro Leu Glu Lys
    130   135   140

Ser Thr Arg Tyr Val Tyr Phe Asp Gln Lys Val Arg Gly Glu Tyr Leu
145   150   155   160

Tyr Tyr Arg Asp Pro Ile Leu Met Thr Ser Ala Phe Lys Asp Met Phe
                165   170   175

Leu Gly Thr Cys Asp Phe Leu Phe Asp Thr Tyr Ser Ala Leu Ile Pro
            180   185   190

Gln Val Arg Ala Tyr Phe Glu Lys Leu Tyr Pro Lys Asp Ser Lys Thr
    195   200   205

Pro Ala Ser Ala Tyr Ala Thr Ser Leu Arg Ala Lys Val Leu Asp Cys
    210   215   220

Ile Arg Gly Leu Leu Pro Ala Ala Thr Leu Thr Asn Leu Gly Phe Phe
225   230   235   240

Gly Asn Gly Arg Phe Trp Gln Asn Leu Ile His Lys Leu Gln Gly His
                245   250   255

Asn Leu Ala Glu Leu Arg Arg Leu Gly Asp Glu Ser Leu Thr Glu Leu
            260   265   270

Met Lys Val Ile Pro Ser Phe Val Ser Arg Ala Glu Pro His His His
    275   280   285

His His Gln Ala Met Met Gln Tyr Arg Arg Ala Leu Lys Glu Gln Leu
    290   295   300

Lys Gly Leu Ala Glu Gln Ala Thr Phe Ser Glu Glu Met Ser Ser Ser
305   310   315   320

Pro Ser Val Gln Leu Val Tyr Gly Asp Pro Asp Gly Ile Tyr Lys Val
            325   330   335

Ala Ala Gly Phe Leu Phe Pro Tyr Ser Asn Arg Ser Leu Thr Asp Leu
            340   345   350

972

```
Ile Asp Tyr Cys Lys Lys Met Pro His Glu Asp Leu Val Gln Ile Leu
    355                     360                 365
Glu Ser Ser Val Ser Ala Arg Glu Asn Arg Arg His Lys Ser Pro Arg
    370                 375                 380
Gly Leu Glu Cys Val Glu Phe Gly Phe Asp Ile Leu Ala Asp Phe Gly
385                 390                 395                 400
Ala Tyr Arg Asp Leu Gln Arg His Arg Thr Leu Thr Gln Glu Arg Gln
                405                 410                 415
Leu Leu Ser Thr His His Gly Tyr Asn Phe Pro Val Glu Leu Leu Asp
                420                 425                 430
Thr Pro Met Glu Lys Ser Tyr Arg Glu Ala Met Glu Arg Ala Asn Glu
        435                 440                 445
Thr Tyr Asn Glu Ile Val Gln Glu Phe Pro Glu Glu Ala Gln Tyr Met
    450                 455                 460
Val Pro Met Ala Tyr Asn Ile Arg Trp Phe Phe His Val Asn Ala Arg
465                 470                 475                 480
Ala Leu Gln Trp Ile Cys Glu Leu Arg Ser Gln Pro Gln Gly His Gln
                485                 490                 495
Asn Tyr Arg Thr Ile Ala Thr Gly Leu Val Arg Glu Val Val Lys Phe
            500                 505                 510
Asn Pro Met Tyr Glu Leu Phe Phe Lys Phe Val Asp Tyr Ser Asp Ile
    515                 520                 525
Asp Leu Gly Arg Leu Asn Gln Glu Met Arg Lys Glu Pro Thr Thr
530                 535                 540
```

        <210> 749
        <211> 35
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 749

```
Arg Thr Cys Met Gly Cys Lys Gly Ala Glu Val Gln Ile Leu Ser Ser
1               5                   10                  15
Arg Ser Leu Ser Gly Met Lys Ile Leu Ser Ser Ser Leu Phe Tyr Lys
            20                  25                  30
Lys Phe Cys
        35
```

        <210> 750
        <211> 292
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 750

```
Gly Thr Leu Val Leu His Ala Leu Asp Thr Tyr Arg Pro Ser Ile Glu
1               5                   10                  15
Ser Ala Ile Glu Lys Ala Leu Glu Gly Phe Gly Pro Ile Gly His Pro
            20                  25                  30
Ile Arg Ser Pro Val Glu Tyr Ala Leu Gln Gly Gly Gly Lys Arg Leu
        35                  40                  45
Arg Pro Gly Leu Val Cys Met Met Ala Gln Gly Leu Gly Leu Asn His
    50                  55                  60
Asp Val Met Asp Ser Ala Leu Ala Val Glu Phe Val His Thr Ser Thr
65                  70                  75                  80
Leu Ile Ala Asp Asp Leu Pro Cys Met Asp Asn Asp Asp Glu Arg Arg
                85                  90                  95
Gly Arg Pro Thr Val His Lys Ala Phe Asp Glu Ala Thr Ala Leu Leu
            100                 105                 110
Ala Ser Tyr Ala Leu Ile Pro Ala Ala Tyr Ser His Leu Arg Leu Asn
    115                 120                 125
```

973

Ala Lys Lys Leu Lys Glu Gln Gly Cys Asp Pro Arg Glu Ile Asp Ile
    130   135   140
Ala Tyr Asn Ile Ile Gly Asp Ile Thr Asp Lys Asn Ile Gly Cys Ser
145   150   155   160
Gly Val Leu Gly Gly Gln Tyr Asp Asp Met Phe Phe Ser Asn Arg Gly
            165   170   175
Gln Glu His Val Gln Ser Ile Met Ile Lys Lys Thr Gly Ser Leu Phe
            180   185   190
Glu Ile Ala Cys Ile Ser Gly Trp Leu Phe Gly Gly Gly Asp Pro Gln
        195   200   205
Phe Ala Pro Ile Ile Thr Ser Phe Ser Asn Asn Phe Gly Leu Leu Phe
    210   215   220
Gln Ile Lys Asp Asp Phe Ser Asp Leu Gln Lys Asp Ser Gln Gln Ile
225   230   235   240
Gly Leu Asn Tyr Ala Leu Leu Phe Gly Glu Lys Ala Ala Leu Glu Leu
            245   250   255
Leu Ala Arg Ser Gln Asn Asn Cys Leu Glu Leu Leu Asp Arg Leu Ser
            260   265   270
Ala Gly Gly Leu Lys Asn Ser Ser Glu Phe Glu Thr Ile Ile Ser Ser
            275   280   285
Leu Gly Ser Phe
    290

        <210> 751
        <211> 211
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 751
Val Cys Tyr Met Thr Tyr Leu Ala Ser Ser Ile Phe Ser Pro Glu Asp
1   5   10   15
Phe Leu Tyr Pro Glu Ile Ile Ser Lys Ala His Tyr Thr Trp Asp Ile
            20   25   30
Leu Asp Leu Met Asp Gln Met Leu Glu Asn His Val Phe Ser Gly Ile
        35   40   45
His Gly Thr Val Glu Ser Gly Val Thr Leu Lys Asn Ile Glu Lys Ile
    50   55   60
Glu Ile Ala Glu Asp Ala Tyr Val Glu Ser Gly Ala Tyr Ile Val Gly
65   70   75   80
Pro Cys Ile Leu Gly Ser Gln Thr Glu Val Arg His Gly Ala Tyr Leu
            85   90   95
Arg Gly Asn Val Ile Thr Gly Ser Arg Cys Val Val Gly His Cys Thr
            100   105   110
Glu Ile Lys Asn Ser Tyr Leu Gly His His Thr Lys Ala Ala His Phe
        115   120   125
Ala Tyr Leu Gly Asp Ser Val Leu Ser Ser Glu Val Asn Leu Gly Ala
    130   135   140
Gly Val Arg Cys Ala Asn Phe Arg Leu Asp Gly Arg Asn Ile Tyr Val
145   150   155   160
Arg Ser Thr Ser Asp Lys Ser Lys Lys Ile Asp Thr Gly Arg Arg Lys
            165   170   175
Leu Gly Ala Phe Leu Gly Lys Gly Val Ala Ile Gly Cys Asn Val Val
            180   185   190
Ile Asn Pro Gly Gln His Ile Leu Pro His Thr Arg Ile Arg Pro Gly
        195   200   205
Gln Val Ile
    210

974

<210> 752
<211> 253
<212> PRT
<213> Chlamydia pneumoniae

<400> 752

```
Lys Ile Thr Asp Phe Ile Leu Arg Ile His Ser Tyr Asn Leu Phe Cys
1               5                   10                  15
Phe His Met Ile Gly Asp Lys Ile Ile Leu Phe Val Thr Glu Asp Leu
            20                  25                  30
Ser Leu Ser Ser Gln Leu Lys Asp Leu Ala Ser Gln Arg Ser Asp Tyr
        35                  40                  45
Gln Ile Leu Val Ser Pro Val Phe Pro Thr Ser Phe Glu Ser Val Ala
    50                  55                  60
Ile Phe Cys Glu Tyr Leu Leu Leu Pro Glu Gln Ile Phe Ser Pro Gly
65                  70                  75                  80
Ile Phe Pro Glu Glu Asp Leu Ile Val Leu Phe Asp Thr Phe Gln Glu
                85                  90                  95
Glu Ala Ile Thr Lys Val Leu Asn Gln Gly Ala Thr Gly Tyr Leu Leu
                100                 105                 110
Arg Pro Ile Thr Ala Lys Val Leu Asp Ala Val Ile Arg Ala Phe Leu
        115                 120                 125
Arg Gln His Glu Val Leu Glu His Ser Ile Pro Asp Thr Met Thr Phe
    130                 135                 140
Gly Asp His Thr Phe Arg Val Leu Asn Leu Val Ile Glu Ser Pro Glu
145                 150                 155                 160
Gly Ser Val Tyr Leu Thr Pro Ser Glu Ala Gly Ile Leu Lys Lys Leu
                165                 170                 175
Leu Ile Asn Arg Gly His Leu Cys Leu Arg Lys Asn Leu Leu Ala Glu
            180                 185                 190
Ile Lys Gly Asn Thr Lys Glu Ile Ile Ala Arg Asn Val Asp Val His
        195                 200                 205
Ile Ala Ser Leu Arg Lys Lys Leu Gly Pro Tyr Gly Ser Lys Ile Val
    210                 215                 220
Thr Ile Arg Gly Val Gly Tyr Leu Phe Ser Asp Asp Asp Ser Ile Pro
225                 230                 235                 240
Leu Gln Asn His Asp Asn Thr Ala His Pro Asn Glu Glu
                245                 250
```

<210> 753
<211> 609
<212> PRT
<213> Chlamydia pneumoniae

<400> 753

```
Met Phe Arg Cys Ile Leu Phe Gly Ile Phe Leu Leu Thr Cys Phe Ser
1               5                   10                  15
Ser Gly Gly Val Leu Tyr Tyr Leu Phe Cys Ser His Asp Phe Ser Ile
            20                  25                  30
Gly Pro Lys Glu Lys Ser Arg Ser Val Trp Ile Glu Glu Glu Lys Glu
        35                  40                  45
Phe Thr Asp Ser Val Leu His His Leu Pro Ser Gln His Gln His Leu
    50                  55                  60
His Ile Leu Cys Phe Gln Gly Phe Leu Leu Gln Lys Gln Gln Lys Phe
65                  70                  75                  80
Ser Gln Ala Glu Lys Ile Phe Ser Lys Val Tyr Asp Glu Ala Gln Asp
                85                  90                  95
Gly Pro Phe Leu Phe Lys Glu Glu Ile Leu Gly Ser Arg Leu Ile Asn
                100                 105                 110
Ser Phe Phe Leu Glu Lys Thr Asp Val Met Glu Thr Ile Leu Cys Leu
        115                 120                 125
```

975

```
Leu Asn Gln Arg Cys Pro Asn Ser Pro Tyr Tyr His Leu Phe Lys Ala
    130                 135                 140
Leu Val Cys Tyr Lys Gln Lys Leu Tyr Arg Glu Val Ile Glu Gln Leu
145                 150                 155                 160
Ala Tyr Trp Gln Glu Glu Lys Thr Arg Ala Leu Ala Pro Leu Leu Asn
                165                 170                 175
Ile Ser Ile Glu Gln Leu Leu Thr Asp Phe Leu Leu Asp Tyr Ile Ser
                180                 185                 190
Ala His Ser Leu Ile Glu Gln Lys Met Phe Pro Glu Gly Arg Val Ile
            195                 200                 205
Leu Asn Arg Asn Ile Asn Arg Leu Leu Lys His Glu Cys Glu Trp Asn
    210                 215                 220
Ala Lys Thr Tyr Asp Arg Ile Ala Ile Leu Leu Ser Arg Ser Tyr Phe
225                 230                 235                 240
Leu Glu Leu Val Glu Ser Lys Ser Ala Asp Ile Tyr Phe Asp Tyr Tyr
                245                 250                 255
Glu Met Val Leu Phe Tyr Leu Lys Lys Ile Tyr Ile Leu Glu Gln Cys
                260                 265                 270
Pro Tyr Ala Glu Leu Leu Pro Glu Glu Glu Leu Val Ser Leu Ile Met
            275                 280                 285
Glu His Val Phe Ile Leu Pro Lys Asp Lys Leu Tyr Pro Leu Ile Gln
    290                 295                 300
Leu Leu Glu Met Trp Gln Lys His Tyr Val His Pro Asn Ser Ser Leu
305                 310                 315                 320
Val Val Gln Ile Leu Val Asp Arg Phe Ser Thr His Met Glu Gly Ala
                325                 330                 335
Ile Arg Phe Cys Glu Ala Leu Val Ser Phe Ser Gly Leu Glu Glu Leu
            340                 345                 350
His Gln Gln Ile Ile Thr Thr Phe Glu Glu Leu Leu Ser Asn Lys Val
    355                 360                 365
Gln Gln Ile Lys Thr Glu Glu Ala Lys Gln Cys Val Ala Leu Leu His
    370                 375                 380
Ile Leu Asp Pro Ser Ile Ser Ile Ser Glu Lys Leu Ala Leu Ser Ser
385                 390                 395                 400
Asp Thr Leu Gln Asn Ile Val Ser Gly Asp Asp Glu Gln His Thr Lys
                405                 410                 415
Leu Arg Asn Tyr Leu Asp Leu Trp Glu Ala Ile Gln Ser Tyr Asp Ile
            420                 425                 430
Asp Arg Gln Gln Leu Val His His Leu Val Tyr Gly Ala Lys Asp Leu
    435                 440                 445
Trp Lys Lys Gly Gly Asn Asp Glu Lys Ala Leu Asn Leu Leu Gln Leu
    450                 455                 460
Val Leu Arg Phe Thr Ser Tyr Asp Ile Glu Cys Glu Ser Val Val Phe
465                 470                 475                 480
Leu Phe Ile Lys Gln Ala Tyr Lys Gln Ala Leu Ser Ser His Ala Ile
                485                 490                 495
Ala Arg Leu Leu Lys Leu Glu Lys Phe Ile Ser Glu Ala Asn Ile Pro
            500                 505                 510
Ser Ile Val Ile Ser Glu Ala Glu Lys Ala Asn Phe Leu Ala Asp Ala
            515                 520                 525
Glu Tyr Leu Phe Ala His Glu Asp Tyr Asp Lys Cys Tyr Leu Tyr Ser
    530                 535                 540
Met Trp Leu Thr Lys Val Ala Pro Ser Pro Gln Ser Tyr Arg Leu Ala
545                 550                 555                 560
Gly Leu Cys Leu Met Glu Asn Lys Arg Tyr Asp Glu Ala Leu Glu Phe
                565                 570                 575
Leu Cys Met Leu Ser Pro Asn Asp Ser Ile Asn Asp Tyr Lys Thr Gln
            580                 585                 590
Lys Ala Leu Ala Phe Cys Gln Lys His Gln Ser Lys Asp Arg Ala Ala
    595                 600                 605
Ser
```

<210> 754
<211> 496
<212> PRT
<213> Chlamydia pneumoniae

<400> 754

```
Gly Trp Ala Leu His Thr Glu Phe Ala Pro Phe Leu Glu Asp Leu Val
1               5                   10                  15
His Gln Gln Val Ile Ser Pro Leu Asp Ile Ala Phe Ala Ser Lys His
            20                  25                  30
Ile Ser Ser Asp Phe Glu Glu Ser Phe Val Phe Leu Ala Val Ser Ser
            35                  40                  45
Ala Leu Trp Arg Tyr Gly His Pro Phe Leu Ser Leu Glu Glu Asn Arg
    50                  55                  60
Ile Arg Pro Ser Leu Gly Gly Ile Ser Glu Thr Asp Leu Tyr Arg Gly
65                  70                  75                  80
Phe His Asn Leu Pro Lys Glu Ala Arg Asp Lys Leu Phe Val Val Val
                85                  90                  95
Ser Gly Arg Leu Tyr Leu Arg Ser Leu Tyr Thr Ile Arg Ser Lys Leu
            100                 105                 110
Leu Asp Lys Leu Ser Leu Leu Cys Ser Ala Thr Pro Asn Tyr Phe Pro
            115                 120                 125
Pro Ser Ile Asp Ser Ser Ile Leu Ser Glu Glu Gln Asn Phe Ile Phe
    130                 135                 140
Asn Lys Ile Thr Gln Gly Cys Phe Ser Ile Val Ser Gly Gly Pro Gly
145                 150                 155                 160
Thr Gly Lys Thr Phe Leu Ala Ala Gln Leu Ile Leu Ser Leu Val Lys
                165                 170                 175
Gln Gln Pro Lys Leu Arg Ile Ala Ile Val Ser Pro Thr Gly Lys Ala
            180                 185                 190
Thr Ser His Ile Arg Gln Ile Leu Met Lys Tyr Asn Ile Phe Asp Asp
            195                 200                 205
Met Val Leu Met Gln Thr Val His His Phe Leu Gln Glu Tyr Ala Tyr
    210                 215                 220
Arg Arg Tyr Asn Ser Ile Asp Val Leu Leu Val Asp Glu Gly Ser Met
225                 230                 235                 240
Val Thr Phe Asp Leu Leu Tyr Ser Leu Val Gln Thr Leu Gln Gly Tyr
                245                 250                 255
Glu Lys Asp Lys Lys Leu Tyr Thr Ser Ser Leu Ile Ile Leu Gly Asp
            260                 265                 270
Thr Asn Gln Leu Pro Pro Ile Gly Ile Gly Val Gly Asn Pro Leu Gln
    275                 280                 285
Asp Leu Ile Gly Tyr Phe His Glu Asn Thr Phe Phe Leu Lys Thr Ser
    290                 295                 300
His Arg Ala Lys Thr Gly Val Val Asp Gln Leu Thr Gln Ser Val Leu
305                 310                 315                 320
Arg Gly Glu Met Ile Ser Phe Ser Pro Leu Pro Ser Ile Ser Ser Ala
                325                 330                 335
Ile Glu Val Leu Lys Asn Arg Phe Val Lys Ser Leu Arg Gln Ser Glu
            340                 345                 350
Ala Arg Leu Cys Val Leu Thr Pro Met Arg His Gly Pro Trp Gly Val
            355                 360                 365
Leu Asn Leu Asn Thr Met Ile His Gln Arg Leu Ala Arg Ser Asp Pro
    370                 375                 380
Asp Leu Arg Ile Pro Ile Met Val Thr Ser Arg Tyr Glu Thr Trp Gly
385                 390                 395                 400
Leu Phe Asn Gly Asp Thr Gly Leu Leu Cys Leu Lys Thr Gln Lys Leu
                405                 410                 415
His Phe Pro Gln His Glu Pro Ile Asp Ser Arg Ala Leu Ser Gln Tyr
            420                 425                 430
```

977

Val Tyr Asn Tyr Val Met Ser Val His Lys Ser Gln Gly Ser Glu Tyr
    435   440   445
Asp Glu Val Ile Val Ile Ile Pro Lys Gly Ser Glu Val Phe Gly Val
    450   455   460
Ser Ile Leu Tyr Thr Ala Ile Thr Arg Ala Lys Tyr Arg Val Ser Val
465   470   475   480
Trp Gly Asp Pro Glu Thr Leu His Lys Ile Ile Lys Lys Ser Asn Tyr
                485   490   495

<210> 755
<211> 283
<212> PRT
<213> Chlamydia pneumoniae

<400> 755
Ile Met Ala Thr Ala His Leu Gly Arg Gln Ala Leu Leu His Leu Arg
1   5   10   15
Ser Trp Thr Pro Ala Ile Arg Ala Ser Gly Asn Leu Phe Arg Gln Gln
            20   25   30
Ser Met Ser Leu His Asn Asn Val Leu Phe Ala Gly Asp Ile Val Gly
        35   40   45
Ala Ile Lys Asn Ser Thr Ala Ile Ser Arg His Ala Leu Gly Ser Ser
    50   55   60
His Tyr Ala His Ala Ala Leu Gln Lys Thr Glu Gly Phe Leu Gly Ala
65   70   75   80
Ala Asp Gly Val Asn Thr Ala Val Ala Gly Ala Met Leu Trp Gly Gln
                85   90   95
Leu Leu Asn Gly Ser Met Ile Phe Glu Thr Asp Glu Glu Thr Gly Glu
            100   105   110
Leu Arg Arg Cys Asn Glu Ala Asp Ala Glu Gly Cys Met Thr Gln Lys
        115   120   125
Leu Gln Arg Arg Ser Ala Leu Thr Ile Thr Gly Lys Val Ala Arg Leu
    130   135   140
Ala Ser Lys Thr Leu Gly Thr Ala Thr Phe Leu His Glu Met Asp Val
145   150   155   160
Val Ser Leu Gly Ala Asn Ala Asn Lys Ile Gly Cys Lys Val Thr Ser
                165   170   175
Cys Leu Asn Leu Val Ala Thr Gly Cys Ser Leu Thr Glu Ser Ser Ile
            180   185   190
Ser Leu Tyr Arg Ile Leu Ser Thr Arg Pro Glu Thr Ile Ser Asp Pro
        195   200   205
Glu Asn Arg Asn Lys Pro Ser Ala Glu Phe Ala Ala Arg Ser Lys Ala
    210   215   220
Ile Arg Asn Ala Phe Ile Ala Trp Leu Gly Asp Val Val Asp Leu Val
225   230   235   240
Cys Asp Ala Leu Gly Thr Leu Ser Leu Phe Leu Pro Ala Ile Leu Gly
                245   250   255
Val His Ala Val Leu Ile Met Ala Ile Leu Gly Leu Ile Ser Cys Val
            260   265   270
Ile Asn Phe Val Lys Asp Tyr Ala Lys Ile Gly
        275   280

<210> 756
<211> 114
<212> PRT
<213> Chlamydia pneumoniae

<400> 756
Gln Phe Ile Leu Asn Leu Lys Val Leu Val Leu Ser Gly Asp Ile Met
1   5   10   15

978

```
Ala Pro Lys Lys Pro Asn Lys Lys Asn Val Ile Gln Arg Arg Pro Ser
            20              25                  30
Ala Glu Lys Arg Ile Leu Thr Ala Gln Lys Arg Glu Leu Ile Asn His
        35              40                  45
Ser Phe Lys Ser Lys Val Lys Thr Ile Val Lys Lys Phe Glu Ala Ser
    50              55                  60
Leu Lys Leu Asp Asp Thr Gln Ala Thr Leu Ser Asn Leu Gln Ser Val
65              70                  75                      80
Tyr Ser Val Val Asp Lys Ala Val Lys Arg Gly Ile Phe Lys Asp Asn
            85                  90                  95
Lys Ala Ala Arg Ile Lys Ser Lys Ala Thr Leu Lys Val Asn Ala Arg
            100                 105                 110
Ala Ser
```

```
Tyr Lys Asp Leu Phe Phe Met Leu Leu Val Arg Lys Trp Leu His Thr
1               5               10                  15
Cys Phe Lys Tyr Trp Ile Tyr Phe Leu Pro Val Val Thr Leu Leu Leu
            20              25                  30
Pro Leu Val Cys Tyr Pro Phe Leu Ser Ile Ser Gln Lys Ile Tyr Gly
            35              40                  45
Tyr Phe Val Phe Thr Thr Ile Ser Ser Leu Gly Trp Phe Phe Ala Leu
    50              55                  60
Arg Arg Arg Glu Asn Gln Leu Lys Thr Ala Ala Val Gln Leu Leu Gln
65              70                  75                      80
Thr Lys Ile Arg Lys Leu Thr Glu Asn Asn Glu Gly Leu Arg Gln Ile
            85                  90                  95
Arg Glu Ser Leu Lys Glu His Gln Gln Glu Ser Ala Gln Leu Gln Ile
            100                 105                 110
Gln Ser Gln Lys Leu Lys Asn Ser Leu Phe His Leu Gln Gly Leu Leu
    115                 120                 125
Val Lys Thr Lys Gly Glu Gly Gln Lys Leu Glu Thr Leu Leu Leu His
    130                 135                 140
Arg Thr Glu Glu Asn Arg Cys Leu Lys Met Gln Val Asp Ser Leu Ile
145                 150                 155                 160
Gln Glu Cys Gly Glu Lys Thr Glu Glu Val Gln Thr Leu Asn Arg Glu
            165                 170                 175
Leu Ala Glu Thr Leu Ala Tyr Gln Gln Ala Leu Asn Asp Glu Tyr Gln
            180                 185                 190
Ala Thr Phe Ser Glu Gln Arg Asn Met Leu Asp Lys Arg Gln Ile Tyr
    195                 200                 205
Ile Gly Lys Leu Glu Asn Lys Val Gln Asp Leu Met Tyr Glu Ile Arg
    210                 215                 220
Asn Leu Leu Gln Leu Glu Ser Asp Ile Ala Glu Asn Ile Pro Ser Gln
225                 230                 235                 240
Glu Ser Asn Ala Val Thr Gly Asn Ile Ser Leu Gln Leu Ser Ser Glu
            245                 250                 255
Leu Lys Lys Ile Ala Phe Lys Ala Glu Asn Ile Glu Ala Ala Ser Ser
            260                 265                 270
Leu Thr Ala Ser Arg Tyr Leu His Thr Asp Thr Ser Val His Asn Tyr
    275                 280                 285
Ser Leu Glu Cys Arg Gln Leu Phe Asp Ser Leu Arg Glu Glu Asn Leu
    290                 295                 300
Gly Met Leu Phe Val Tyr Ala Arg Gln Ser Gln Arg Ala Val Phe Ala
305                 310                 315                 320
```

Asn Ala Leu Phe Lys Thr Trp Thr Gly Tyr Cys Ala Glu Asp Phe Leu
325   330   335
Lys Phe Gly Ser Asp Ile Val Ile Ser Gly Gly Lys Gln Trp Met Glu
340   345   350
Asp Leu His Ser Ser Arg Glu Glu Cys Ser Gly Arg Leu Val Ile Lys
355   360   365
Thr Lys Ser Arg Gly His Leu Pro Phe Arg Tyr Cys Leu Met Ala Leu
370   375   380
Asn Lys Gly Pro Leu Cys Tyr His Val Leu Gly Val Leu Tyr Pro Leu
385   390   395   400
His Lys Glu Val Leu Gln Ser
                405

        <210> 758
        <211> 596
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 758
Ile Ser Tyr Leu Pro Leu Thr Lys Leu Ser Ser Lys Ala Arg Asn Pro
1   5   10   15
Leu Val Leu Phe Gln Val Arg Lys Leu Phe Met Asn Thr Gln Asn Ser
            20   25   30
Gln Ala Thr Glu Val Ser Ser Glu Glu Glu Ser Gln Lys Lys Leu Glu
        35   40   45
Glu Leu Val Ala Leu Ala Lys Glu Gln Gly Phe Ile Thr Tyr Glu Glu
    50   55   60
Ile Asn Glu Ile Leu Pro Met Ser Phe Asp Thr Pro Glu Gln Ile Asp
65   70   75   80
Gln Val Leu Ile Phe Leu Thr Gly Met Asp Ile Gln Val Leu Asn Gln
            85   90   95
Ile Asp Val Glu Arg Gln Lys Glu Lys Lys Lys Glu Ala Lys Glu Leu
            100   105   110
Glu Gly Leu Ala Arg Arg Thr Glu Gly Thr Pro Asp Asp Pro Val Arg
        115   120   125
Met Tyr Leu Lys Glu Met Gly Thr Val Pro Leu Leu Thr Arg Glu Glu
    130   135   140
Glu Val Glu Ile Ser Lys Arg Ile Glu Lys Ala Gln Val Gln Ile Glu
145   150   155   160
Arg Ile Ile Leu Arg Phe Arg Tyr Ser Ala Lys Glu Ala Ile Ser Ile
                165   170   175
Ala His Tyr Leu Ile Ser Gly Lys Glu Arg Phe Asp Lys Ile Ile Ser
            180   185   190
Glu Lys Glu Val Glu Asp Lys Thr His Phe Leu Lys Leu Leu Pro Lys
        195   200   205
Leu Ile Thr Leu Leu Lys Glu Glu Asp Thr Tyr Leu Glu Asn Leu Leu
    210   215   220
Leu Ser Leu Lys Gln Pro Asp Leu Ser Lys Gln Glu Ala Ala Lys Leu
225   230   235   240
Asn Asp Ser Leu Glu Lys Cys Arg Ile Arg Thr Gln Ala Tyr Leu Arg
                245   250   255
Cys Phe His Cys Arg His Asn Val Thr Glu Asp Phe Gly Glu Val Val
            260   265   270
Phe Lys Ala Tyr Asp Ser Phe Leu His Leu Glu Gln Gln Ile Asn Asp
        275   280   285
Leu Lys Val Arg Ala Glu Arg Asn Lys Phe Ala Ala Ala Lys Leu Ala
    290   295   300
Ala Ala Lys Arg Lys Leu Tyr Lys Arg Glu Val Ala Ala Gly Arg Thr
305   310   315   320
Leu Glu Glu Phe Lys Lys Asp Val Arg Met Leu Gln Arg Trp Met Asp
                325   330   335

```
Lys Ser Gln Glu Ala Lys Lys Glu Met Val Glu Ser Asn Leu Arg Leu
            340                 345                 350
Val Ile Ser Ile Ala Lys Lys Tyr Thr Asn Arg Gly Leu Ser Phe Leu
            355                 360                 365
Asp Leu Ile Gln Glu Gly Asn Met Gly Leu Met Lys Ala Val Glu Lys
            370                 375                 380
Phe Glu Tyr Arg Arg Gly Tyr Lys Phe Ser Thr Tyr Ala Thr Trp Trp
385                 390                 395                 400
Ile Arg Gln Ala Val Thr Arg Ala Ile Ala Asp Gln Ala Arg Thr Ile
            405                 410                 415
Arg Ile Pro Val His Met Ile Glu Thr Ile Asn Lys Val Leu Arg Gly
            420                 425                 430
Ala Lys Lys Leu Met Met Glu Thr Gly Lys Glu Pro Thr Pro Glu Glu
            435                 440                 445
Leu Ala Glu Glu Leu Gly Leu Thr Pro Asp Arg Val Arg Glu Ile Tyr
            450                 455                 460
Lys Ile Ala Gln His Pro Ile Ser Leu Gln Ala Glu Val Gly Glu Gly
465                 470                 475                 480
Ser Glu Ser Ser Phe Gly Asp Phe Leu Glu Asp Thr Ala Val Glu Ser
                485                 490                 495
Pro Ala Glu Ala Thr Gly Tyr Ser Met Leu Lys Asp Lys Met Lys Glu
            500                 505                 510
Val Leu Lys Thr Leu Thr Asp Arg Glu Arg Phe Val Leu Ile His Arg
            515                 520                 525
Phe Gly Leu Leu Asp Gly Lys Pro Lys Thr Leu Glu Glu Val Gly Ser
530                 535                 540
Ala Phe Asn Val Thr Arg Glu Arg Ile Arg Gln Ile Glu Ala Lys Ala
545                 550                 555                 560
Leu Arg Lys Met Arg His Pro Ile Arg Ser Lys Gln Leu Arg Ala Phe
                565                 570                 575
Leu Asp Leu Leu Glu Glu Glu Lys Thr Gly Thr Ser Lys Val Lys Ser
            580                 585                 590
Leu Lys Ser Lys
            595


        <210> 759
        <211> 142
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 759
Pro Cys Ile Lys Asn Ile Ala Leu Val Ile Ala Ile Glu Arg Tyr Gln
1               5                   10                  15
Leu Ile Ile Ser Lys Phe Arg Met Trp Leu Phe Leu Gly Cys Ser Val
            20                  25                  30
Glu Glu Arg His Phe Lys Gln Pro Val Leu Ile Ser Val Thr Phe Ser
            35                  40                  45
Tyr Asn Glu Val Pro Ser Ala Cys Leu Ser Asp Lys Leu Ser Asp Ala
    50                  55                  60
Cys Cys Tyr Leu Glu Val Thr Ser Leu Ile Glu Glu Ile Ala Asn Thr
65                  70                  75                  80
Lys Pro Tyr Ala Leu Ile Glu His Leu Ala Asn Glu Leu Phe Asp Ser
                85                  90                  95
Leu Val Ile Ser Phe Gly Asp Lys Ala Ser Lys Ile Asp Leu Glu Val
            100                 105                 110
Glu Lys Glu Arg Pro Pro Val Pro Asn Leu Leu Asn Pro Ile Lys Phe
            115                 120                 125
Thr Ile Ser Lys Glu Leu Cys Pro Ser Pro Val Leu Ser Ala
            130                 135                 140
```

<210> 760
<211> 452
<212> PRT
<213> Chlamydia pneumoniae

<400> 760

```
Arg Ala Met Ser Glu Pro Arg Phe Val Cys Leu Ser Leu Gly Ser Asn
1               5                   10                  15
Leu Gly Asn Arg Phe Lys Asn Leu Gln Ile Ala Arg Thr Leu Leu Gly
            20                  25                  30
Glu Gln Ala Val Leu Gly Leu Arg Ser Ser Val Ile Leu Glu Thr Glu
        35                  40                  45
Ala Leu Leu Leu Pro Gly Ser Pro Pro Glu Trp Asp Leu Pro Tyr Phe
    50                  55                  60
Asn Ser Val Leu Val Gly Glu Thr Thr Leu Ser Leu Arg Glu Leu Leu
65                  70                  75                  80
Val Thr Ile Lys Gln Ile Glu Lys Val Val Gly Arg Ala Glu Glu Ser
                85                  90                  95
Pro Pro Trp Ser Pro Arg Thr Ile Asp Val Asp Ile Leu Leu Tyr Gly
            100                 105                 110
Asp Glu Ser Phe Cys Cys Asp His Thr Glu Ile Thr Ile Pro Leu Ser
            115                 120                 125
Asn Leu Leu Ser Arg Pro Phe Leu Ile Ala Leu Ile Ala Ser Leu Cys
    130                 135                 140
Pro Tyr Arg Arg Phe Cys Thr Gln Gly Ser Pro Tyr His Asn Phe Thr
145                 150                 155                 160
Phe Gly Glu Leu Ala His His Leu Pro Ser Pro Pro Gly Met Ile Arg
                165                 170                 175
Arg Ser Leu Ser Pro Asp Thr Met Leu Met Gly Val Val Asn Val Thr
            180                 185                 190
Asn Asp Ser Met Ser Asp Gly Gly Met Phe Leu Asp Pro Glu Lys Ala
    195                 200                 205
Val Ala Gln Ala Glu Lys Leu Phe Thr Glu Gly Ala Ala Val Ile Asp
    210                 215                 220
Phe Gly Ala Gln Ala Thr Asn Pro Lys Val Lys Gln Phe Leu Ser Val
225                 230                 235                 240
Asp Gln Glu Trp Glu Arg Leu Glu Pro Val Leu Arg Leu Leu Lys Glu
                245                 250                 255
Thr Trp Ser Asn Arg Lys Gln Tyr Pro Ile Ile Ser Leu Asp Thr Phe
            260                 265                 270
Tyr Pro Glu Ile Ile Leu Arg Ala Met Asp Ile Tyr Pro Ile Gln Trp
        275                 280                 285
Ile Asn Asp Val Ser Gly Gly Ser Gln Ser Met Ala Glu Val Ala Arg
    290                 295                 300
Asp Cys Glu Leu Ser Leu Val Met Asn His Ser Ser Ser Leu Pro Val
305                 310                 315                 320
Asp Pro Lys Asn Ile Leu Ser Phe Ser Val Pro Ile Gly Glu Gln Leu
            325                 330                 335
Leu Ser Trp Gly Glu Lys Gln Leu Lys Met Phe Ser Asp Val Gly Leu
            340                 345                 350
Asn Ala Asn Gln Val Ile Phe Asp Pro Gly Ile Gly Phe Gly Lys Gly
        355                 360                 365
Ala Ala Gln Ser Leu Ala Thr Leu Tyr Glu Ile Ala Lys Phe Lys Arg
    370                 375                 380
Leu Gly Cys Pro Ile Leu Ile Gly His Ser Arg Lys Ser Phe Leu Ser
385                 390                 395                 400
Leu Phe Gly Asn His Asp Pro Lys Asp Arg Asp Trp Glu Thr Val Gly
                405                 410                 415
Leu Ser Ile Leu Leu Gln Gln Gln Gly Val Asp Tyr Leu Arg Val His
            420                 425                 430
```

982

```
Asn Val Ala Ala His Gln Lys Ala Leu Ser Val Ala Ala Cys Glu Ala
        435                 440                 445
Cys Ala Pro Ile
    450


        <210> 761
        <211> 188
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 761
Leu Leu Val Lys Pro Val His Pro Ser Asn Phe Glu Asn Pro Leu Gly
1               5                   10                  15
Val Glu Met Cys Lys Asn Arg Gly Val Arg Gly Ile Val Ala Cys Asp
            20                  25                  30
Pro Arg Gly Val Ile Gly Leu Glu Gly Lys Leu Pro Trp His Tyr Pro
            35                  40                  45
Glu Asp Leu Gln Phe Phe Ser Glu Thr Ile Gln Lys Phe Pro Ile Val
    50                  55                  60
Met Gly Arg Lys Thr Trp Glu Thr Leu Pro Arg Lys Tyr Phe Val Asp
65                  70                  75                  80
Arg Ala Val Val Val Phe Ser His Glu Lys Arg Gln Gly Val His Gly
                85                  90                  95
Glu Ile Trp Val Thr Ser Leu Glu Glu Phe Leu Leu Leu Asp Leu Ser
            100                 105                 110
Ser Pro Thr Phe Leu Ile Gly Gly Gly Glu Leu Tyr Ser Leu Phe Leu
            115                 120                 125
Glu Asn Gln Ile Val Arg Asp Phe Phe Ile Ser His Ile Lys Lys Glu
    130                 135                 140
Tyr Ala Gly Asp Thr Phe Phe Pro Leu Ser Leu Leu Glu Thr Trp Thr
145                 150                 155                 160
Lys Thr Val Leu Arg Asp Thr Gln Lys Ile Thr Thr Cys Tyr Tyr Glu
                165                 170                 175
Asn His His Ser Gln Asn Thr Lys Asn Ile Ser Leu
            180                 185


        <210> 762
        <211> 264
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 762
Arg His Gly Pro Lys Leu Cys Leu Glu Ile Pro Lys Arg Ser Gln Arg
1               5                   10                  15
Val Thr Met Lys Ile Thr Thr Val Lys Thr Pro Lys Ile Tyr Pro Tyr
            20                  25                  30
Asp Asp Leu Tyr Ser Ile Leu Glu Ser Ser Leu Pro Lys Leu Asn Glu
        35                  40                  45
Arg Ser Ile Val Val Ile Thr Ser Lys Ile Val Ser Leu Cys Glu Gly
    50                  55                  60
Ala Val Val Glu Leu Glu Lys Val Ser Lys Asp Glu Leu Ile Lys Gln
65                  70                  75                  80
Glu Ala Asp Ala Tyr Val Phe Val Glu Lys Tyr Gly Ile Tyr Leu Thr
                85                  90                  95
Lys Lys Trp Gly Ile Leu Ile Pro Ser Ala Gly Ile Asp Glu Ser Asn
            100                 105                 110
Val Glu Gly Tyr Phe Val Leu Tyr Pro Arg Asp Phe Leu Leu Ser Val
        115                 120                 125
Asn Thr Leu Gly Asp Trp Leu Arg Asn Phe Tyr His Leu Glu His Cys
    130                 135                 140
```

```
Gly Ile Ile Ile Ser Asp Ser His Thr Thr Pro Leu Arg Arg Gly Thr
145             150                 155                 160
Met Gly Leu Gly Leu Cys Trp Asn Gly Phe Phe Pro Leu Tyr Asn Tyr
                165                 170                 175
Val Gly Lys Pro Asp Cys Phe Gly Arg Ala Leu Lys Met Thr Tyr Ser
            180                 185                 190
Asn Leu Leu Asp Gly Leu Ser Ala Ala Ala Val Leu Cys Met Gly Glu
        195             200                 205
Gly Asp Glu Gln Thr Pro Ile Ala Ile Ile Glu Glu Ala Pro Lys Ile
    210             215                 220
Thr Phe His Ser Ser Pro Thr Thr Leu Gln Asp Met Ser Thr Leu Ala
225             230                 235                 240
Ile Ala Glu Asp Glu Asp Leu Tyr Gly Pro Leu Leu Gln Ser Met Ala
            245                 250                 255
Trp Glu Thr Pro Ala Pro Thr Ser
            260
```

```
<210> 763
<211> 226
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 763
Gly Ile Met Thr Ser Trp Ile Glu Leu Leu Asp Lys Gln Ile Glu Asp
1             5                   10                  15
Gln His Met Leu Lys His Glu Phe Tyr Gln Arg Trp Ser Glu Gly Lys
                20              25                  30
Leu Glu Lys Gln Gln Leu Gln Ala Tyr Ala Lys Asp Tyr Tyr Leu His
            35              40                  45
Ile Lys Ala Phe Pro Cys Tyr Leu Ser Ala Leu His Ala Arg Cys Asp
    50                  55                  60
Asp Leu Gln Ile Arg Arg Gln Ile Leu Glu Asn Leu Met Asp Glu Glu
65                  70                  75                  80
Ala Gly Asn Pro Asn His Ile Asp Leu Trp Arg Gln Phe Ala Leu Ser
                85                  90                  95
Leu Gly Val Ser Glu Glu Glu Leu Ala Asn His Glu Phe Ser Gln Ala
                100             105                 110
Ala Gln Asp Met Val Ala Thr Phe Arg Arg Leu Cys Asp Met Pro Gln
            115                 120                 125
Leu Ala Val Gly Leu Gly Ala Leu Tyr Thr Tyr Glu Ile Gln Ile Pro
    130                 135                 140
Gln Val Cys Val Glu Lys Ile Arg Gly Leu Lys Glu Tyr Phe Gly Val
145                 150                 155                 160
Ser Ala Arg Gly Tyr Ala Tyr Phe Thr Val His Gln Glu Ala Asp Ile
                165                 170                 175
Lys His Ala Ser Glu Glu Lys Glu Met Leu Gln Thr Leu Val Gly Arg
                180                 185                 190
Glu Asn Pro Asp Ala Val Leu Gln Gly Ser Gln Glu Val Leu Asp Thr
            195                 200                 205
Leu Trp Asn Phe Leu Ser Ser Phe Ile Asn Ser Thr Glu Pro Cys Ser
    210                 215                 220
Cys Lys
225
```

```
<210> 764
<211> 380
<212> PRT
<213> Chlamydia pneumoniae
```

<400> 764

Glu Glu Leu Leu Tyr Phe Ser Arg Phe Ser Glu Lys Gln Asn Tyr Ser
1   5   10   15

Leu Gly Asn Met Glu Thr Lys Arg Ser Ile Tyr Met Asn Leu Pro Asp
            20   25   30

Arg Lys Lys Ala Leu Glu Ala Ala Val Ala Tyr Ile Glu Lys Gln Phe
        35   40   45

Gly Ala Gly Ser Ile Met Ser Leu Gly Arg His Ser Ala Thr His Glu
    50   55   60

Ile Ser Thr Ile Lys Thr Gly Ala Leu Ser Leu Asp Leu Ala Leu Gly
65   70   75   80

Ile His Gly Val Pro Lys Gly Arg Val Ile Glu Ile Phe Gly Pro Glu
                85   90   95

Ser Ser Gly Lys Thr Thr Leu Ala Thr His Ile Val Ala Asn Ala Gln
            100   105   110

Lys Met Gly Gly Val Ala Ala Tyr Ile Asp Ala Glu His Ala Leu Asp
            115   120   125

Pro Ser Tyr Ala Ser Leu Ile Gly Val Asn Ile Asp Asp Leu Met Ile
        130   135   140

Ser Gln Pro Asp Cys Gly Glu Asp Ala Leu Ser Ile Ala Glu Leu Leu
145   150   155   160

Ala Arg Ser Gly Ala Val Asp Val Ile Val Ile Asp Ser Val Ala Ala
                165   170   175

Leu Val Pro Lys Ser Glu Leu Glu Gly Asp Ile Gly Asp Val His Val
            180   185   190

Gly Leu Gln Ala Arg Met Met Ser Gln Ala Leu Arg Lys Leu Thr Ala
            195   200   205

Thr Leu Ser Arg Ser Gln Thr Cys Ala Val Phe Ile Asn Gln Ile Arg
    210   215   220

Glu Lys Ile Gly Val Ser Phe Gly Asn Pro Glu Thr Thr Thr Gly Gly
225   230   235   240

Arg Ala Leu Lys Phe Tyr Ser Ser Ile Arg Leu Asp Ile Arg Arg Ile
                245   250   255

Gly Ser Ile Lys Gly Ser Asp Asn Ser Asp Ile Gly Asn Arg Ile Lys
            260   265   270

Val Lys Val Ala Lys Asn Lys Leu Ala Pro Pro Phe Arg Ile Ala Glu
    275   280   285

Phe Asp Ile Leu Phe Asn Glu Gly Ile Ser Ser Ala Gly Cys Ile Leu
290   295   300

Asp Leu Ala Val Glu Tyr Asn Ile Ile Glu Lys Lys Gly Ser Trp Phe
305   310   315   320

Asn Tyr Gln Glu Lys Lys Leu Gly Gln Gly Arg Glu Phe Val Arg Glu
            325   330   335

Glu Leu Lys Arg Asn Arg Lys Leu Phe Glu Glu Ile Glu Lys Arg Ile
            340   345   350

Tyr Asp Val Ile Ala Ala Asn Lys Thr Pro Ser Val His Ala Asn Glu
    355   360   365

Thr Pro Gln Glu Val Pro Ala Gln Thr Val Glu Ala
370   375   380

<210> 765
<211> 183
<212> PRT
<213> Chlamydia pneumoniae

<400> 765

Asn Phe Pro Met Thr Asp Pro Lys Ile Glu Lys Ser Ala Leu Arg Lys
1   5   10   15

Leu Phe Ile Ser Ile Arg Arg Asp Leu Ser Glu Glu Arg Lys His Glu
            20   25   30

985

```
Ala Ser Ser Ala Val Ala Ser Phe Val Arg Ser Phe Ser Lys Glu Ser
        35              40                  45
Val Val Leu Ser Phe Val Ser Phe Asn His Glu Ile Asp Met Gln Glu
    50              55                  60
Ala Asn Arg Ile Leu Ile Gln Lys Cys Thr Leu Ala Leu Pro Lys Ile
65              70                  75                      80
Asp Gln Glu Asn Leu Tyr Pro Val Leu Ile Pro Ser Ile Asp Asp Leu
                85                  90                  95
Ile Ser Val Val His Pro Lys Asp Pro Phe Ser Lys Gln Thr Pro Ile
            100             105                 110
Ser Ser Asp Lys Ile Thr His Val Leu Val Pro Gly Leu Ala Phe Asp
        115             120                 125
Gln Gln Gly Tyr Arg Leu Gly Tyr Gly His Gly Phe Tyr Asp Arg Trp
    130             135                 140
Leu Ala Gln His Pro Tyr Pro Ser Ile Arg Thr Ile Gly Ile Gly Tyr
145             150                 155                     160
Cys Glu Gln Lys Ile Asp Arg Leu Pro Gln Glu Ser His Asp Ile Pro
                165                 170                 175
Leu Ser Gln Ile Tyr Leu Cys
            180


        <210> 766
        <211> 432
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 766
Gly Tyr Lys Ser Met Asp Ile Lys Lys Leu Phe Cys Leu Phe Leu Cys
1               5                   10                  15
Ser Ser Leu Ile Ala Met Ser Pro Ile Tyr Gly Lys Thr Gly Asp Tyr
        20                  25                  30
Glu Lys Leu Thr Leu Thr Gly Ile Asn Ile Ile Asp Arg Asn Gly Leu
        35                  40                  45
Ser Glu Thr Ile Cys Ser Lys Glu Lys Leu Lys Lys Tyr Thr Lys Val
    50                  55                  60
Asp Phe Leu Ala Pro Gln Pro Tyr Gln Lys Val Met Arg Met Tyr Lys
65              70                  75                      80
Asn Lys Arg Gly Asp Asn Val Ser Cys Leu Thr Ala Tyr His Thr Asn
                85                  90                  95
Gly Gln Ile Lys Gln Tyr Leu Glu Cys Leu Asn Asn Arg Ala Tyr Gly
            100             105                 110
Arg Tyr Arg Glu Trp His Val Asn Gly Asn Ile Lys Ile Gln Ala Glu
        115             120                 125
Val Ile Gly Gly Ile Ala Asp Leu His Pro Ser Ala Glu Ser Gly Trp
    130             135                 140
Leu Phe Asp Gln Thr Thr Phe Ala Tyr Asn Asp Glu Gly Ile Leu Glu
145             150                 155                     160
Ala Ala Ile Val Tyr Glu Lys Gly Leu Leu Glu Gly Ser Ser Val Tyr
                165                 170                 175
Tyr His Thr Asn Gly Asn Ile Trp Lys Glu Cys Pro Tyr His Lys Gly
                180                 185                 190
Val Pro Gln Gly Lys Phe Leu Thr Tyr Thr Ser Ser Gly Lys Leu Leu
        195                 200                 205
Lys Glu Gln Asn Tyr Gln Gln Gly Lys Arg His Gly Leu Ser Ile Arg
    210                 215                 220
Tyr Ser Glu Asp Ser Glu Glu Asp Val Leu Ala Trp Glu Glu Tyr His
225             230                 235                     240
Glu Gly Arg Leu Leu Lys Ala Glu Tyr Leu Asp Pro Gln Thr His Glu
                245                 250                 255
Ile Tyr Ala Thr Ile His Glu Gly Asn Gly Ile Gln Ala Ile Tyr Gly
            260                 265                 270
```


986

```
Lys Tyr Ala Val Ile Glu Thr Arg Ala Phe Tyr Arg Gly Glu Pro Tyr
        275                 280                 285
Gly Lys Val Thr Arg Phe Asp Asn Ser Gly Thr Gln Ile Val Gln Thr
        290                 295                 300
Tyr Asn Leu Leu Gln Gly Ala Lys His Gly Glu Glu Phe Phe Phe Tyr
305                 310                 315                 320
Pro Glu Thr Gly Lys Pro Lys Leu Leu Leu Asn Trp His Glu Gly Ile
                325                 330                 335
Leu Asn Gly Ile Val Lys Thr Trp Tyr Pro Gly Gly Thr Leu Glu Ser
                340                 345                 350
Cys Lys Glu Leu Val Asn Asn Lys Lys Ser Gly Leu Leu Thr Ile Tyr
        355                 360                 365
Tyr Pro Glu Gly Gln Ile Met Ala Thr Glu Glu Tyr Asp Asn Asp Leu
    370                 375                 380
Leu Ile Lys Gly Glu Tyr Phe Arg Pro Gly Asp Arg His Pro Tyr Ser
385                 390                 395                 400
Lys Ile Asp Arg Gly Cys Gly Thr Ala Val Phe Phe Ser Ser Ala Gly
                405                 410                 415
Thr Ile Thr Lys Lys Ile Pro Tyr Gln Asp Gly Lys Pro Leu Leu Asn
                420                 425                 430


        <210> 767
        <211> 205
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 767
Thr Thr Ile Tyr Ile Lys Leu Leu Gly Arg Leu Met Lys Lys Trp Ile
 1               5                   10                  15
Ser Ile Leu Ile Leu Ser Phe Leu Ser Leu Leu Ser Ile Leu Pro Val
                20                  25                  30
Leu Ala Ile Thr Ile Asn His Val Lys Ile Ser Gln Arg Trp Ser Asp
        35                  40                  45
Leu Asn Ser Gln Ile Leu Thr Leu Lys Val Ile Arg Asp His Glu Asp
    50                  55                  60
Gln Val Ile Lys His Asn Ala Arg Ile Ser Lys Asp Arg Asn Asn Leu
65                  70                  75                  80
Ser Ile Glu Ser Leu Asn Ala Ser Cys Lys Gln Leu Arg Pro Leu Ser
                85                  90                  95
Lys Glu Arg Glu Arg Leu Asn Lys Leu Asn Ser Asn Ser Leu Leu Ala
        100                 105                 110
Gln Ser Lys Glu Val Trp Glu Arg Lys Arg Ala Leu Glu Lys Ser Asn
        115                 120                 125
His Gln Leu Val Trp Asn Cys Glu Gln Met His Asn Asp Phe Ala Phe
    130                 135                 140
Val Arg Leu Glu Gln Ala Thr Glu Met Asp Asn Glu Asp Ile Glu Ser
145                 150                 155                 160
Leu Phe Ser Leu Phe Asn Pro Glu Asn Pro Val Ala Pro Leu Val Phe
                165                 170                 175
Phe Thr Cys Trp Lys Met Thr Lys Gln Thr Thr Pro Leu Gly Asn Glu
                180                 185                 190
Val Trp Leu Thr His Ala Glu Ala Ile Ser Arg Trp Ile
        195                 200                 205


        <210> 768
        <211> 464
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 768

```
Ala Met Asn Phe Lys Leu Pro Val Tyr His Ile Gly Leu Thr Lys Ala
1               5                   10                  15
Glu Asn Asn Thr Ile Lys Ile Ala Ile Leu Gln Lys Thr Cys Lys Gly
            20                  25                  30
Trp Ile Val Cys His Cys Glu Gln Ile Pro Glu Gly Lys Thr Trp Ser
        35                  40                  45
Leu Pro Lys Lys Tyr Phe Ala Ala Pro Thr Thr Phe Ser Leu Gln Gly
    50                  55                  60
Ser Asp Ile Leu Val Lys Ser Ser Ser Ser Ser Leu Lys Asn Arg Lys
65              70                  75                  80
Asn Ile Leu Lys Val Ala Leu Thr Asn Leu Glu Ala Ser Leu Ala Leu
            85                  90                  95
Pro Trp Glu Ser Leu Ile Val Gln Pro Gln Leu Gly Lys Pro Thr Asp
            100                 105                 110
Arg Gly Glu Thr Pro Leu Thr Leu Trp Ile Ala Gln Lys Asn Thr Leu
        115                 120                 125
Lys Lys Glu Leu Ser Phe Leu Ser Gln Ala Gln Ile Phe Pro Asp Lys
    130                 135                 140
Leu Ser Cys Arg Ala Ala Asp Ile Phe Phe Leu Ala Glu Gln Ser Pro
145                 150                 155                 160
Leu Lys Ser Leu Pro Ala Tyr Leu Leu Ile Tyr Gly Gly Ser Glu Glu
            165                 170                 175
Val Thr Cys Ile Phe Val Lys Asn His Ala Ile Ala Val Ala Arg Ser
            180                 185                 190
Phe Ser Asn His Ser Thr Lys Lys Ser Cys Asp Asp Ile His Ala Thr
        195                 200                 205
Leu Gln Tyr Ile Gln Glu Thr Phe Pro Gln Thr Val Leu Pro Ala Ile
    210                 215                 220
His Val Ala Gln Ile Ser Pro Asn Leu Gln Lys Ile Leu Glu Gln Lys
225                 230                 235                 240
Leu Ser Leu Pro Leu Val Val Cys Gln Ser Met Thr Tyr Gly Val Glu
            245                 250                 255
Asp Glu Asp Trp Glu Ile Tyr Gly Asp Thr Ile Ala Ala Ala His His
            260                 265                 270
Gly Ala Ser Arg Arg Pro Leu Thr Phe Pro Tyr Asp Ala Thr Ser Val
    275                 280                 285
Ser Pro Ala Ala Gln Lys His Trp Leu Leu Arg Ser Ser Leu Leu Ile
    290                 295                 300
Gly Lys Tyr Ala Leu Met Ala Thr Val Val Val Ser Leu Gly Ser Val
305             310                 315                 320
Leu Lys Leu Lys Ser Leu Ser Ser Ser Ala Ser Asn His Phe Ala Phe
            325                 330                 335
Ala Cys Pro Glu Glu Gly Val Leu Pro Arg Ser Leu Lys Ala Ala Glu
        340                 345                 350
Lys Thr Val Lys Ala Ile Gly Lys Lys Asn Ser Ala Ser Asn Tyr Pro
    355                 360                 365
Leu Leu Pro Thr Ile Pro Thr Ser Glu Gln Thr Leu Lys Phe Leu Leu
    370                 375                 380
Ala Leu Gly Lys Ser Ser Pro Ser Ile Lys Phe Ser Tyr Phe Ser Tyr
385                 390                 395                 400
Thr Met Thr Ser Tyr Pro Ser Lys Asp Asn Pro Ser Leu Pro Tyr Ser
            405                 410                 415
Ala Leu Val Glu Val Lys Gly Gln Gly Gln Pro Glu Asp Ile Pro Gln
            420                 425                 430
Phe Leu Lys Lys Ile Ser Ser His Pro Lys Leu Gln His Val Ser Glu
    435                 440                 445
Ser Leu Glu Asp Gln Arg Ser Phe Lys Leu Gln Phe Thr Leu Ser Ser
450                 455                 460
```

<210> 769
<211> 100
<212> PRT
<213> Chlamydia pneumoniae

<400> 769

```
Asn Ile Met Leu Ser Tyr Leu Leu Arg Thr Ala Ile Asn Val Tyr Ser
1               5                   10                  15
Phe Leu Ile Leu Ala Tyr Ile Phe Ala Ser Trp Val Pro Asp Cys Gln
            20                  25                  30
Ser Ala Arg Trp Tyr Gln Leu Val Ser Lys Cys Val Asp Pro Phe Leu
        35                  40                  45
Asn Phe Phe Arg Arg Phe Val Pro Arg Ile Gly Phe Ile Asp Pro Ser
    50                  55                  60
Pro Phe Val Gly Leu Leu Cys Leu Gly Ile Leu Pro Phe Val Ile Leu
65              70                  75                  80
Arg Val Leu Arg Phe Ile Ile Leu Asn Ile Phe His Ser Pro Trp Leu
                85                  90                  95
Leu Gln Tyr Leu
            100
```

<210> 770
<211> 340
<212> PRT
<213> Chlamydia pneumoniae

<400> 770

```
Tyr Phe Ser Phe Ser Met Ala Ala Pro Ile Phe Ile Lys Asn Ile Leu
1               5                   10                  15
Leu Arg Ser Ser Ile Val Tyr Ala Pro Leu Ala Gly Phe Ser Asp Tyr
            20                  25                  30
Pro Tyr Arg Cys Met Ser Ala Leu Tyr Gln Pro Gly Leu Met Phe Cys
        35                  40                  45
Glu Met Val Lys Val Glu Gly Ile Leu Tyr Ala Pro Glu Arg Thr Ser
    50                  55                  60
Lys Leu Leu Asp Tyr Asn Glu Asn Met Arg Pro Ile Gly Ala Gln Leu
65              70                  75                  80
Cys Gly Ser Asn Pro Glu Thr Ser Gly Glu Ala Ala Lys Ile Leu Glu
                85                  90                  95
Gly Leu Gly Phe Asp Leu Ile Asp Leu Asn Cys Gly Cys Pro Thr Asp
            100                 105                 110
Lys Ile Thr Lys Asp Gly Ser Gly Ser Gly Leu Leu Lys Thr Pro Glu
        115                 120                 125
Leu Ile Gly Arg Ile Leu Asp Lys Ile Ile Asn Ser Val Ser Ile Pro
    130                 135                 140
Val Thr Val Lys Ile Arg Ser Gly Trp Asp Met Glu His Ile Asn Val
145                 150                 155                 160
Glu Asp Thr Val Arg Ile Ile Arg Asp Ala Gly Ala Ser Ala Val Phe
                165                 170                 175
Val His Gly Arg Thr Arg Ala Gln Gly Tyr His Gly Pro Ser Lys Gln
            180                 185                 190
Glu Tyr Ile Ser Arg Ala Lys Ala Ala Ala Gly Lys Glu Phe Pro Val
        195                 200                 205
Phe Gly Asn Gly Asp Ile Phe Ser Pro Glu Ala Ala Gln Ala Met Leu
    210                 215                 220
Thr Thr Gly Cys Asp Gly Val Leu Val Ala Arg Gly Thr Leu Gly Ala
225                 230                 235                 240
Pro Trp Ile Gly Lys Gln Ile Gln Asp Tyr Leu Thr Thr Gly Ser Tyr
                245                 250                 255
Glu Lys Ile Pro Phe Ile Lys Arg Lys Ala Ala Phe Leu Glu His Met
            260                 265                 270
```

989

```
Arg Leu Val Glu Asp Tyr Tyr Gln Ser Glu Thr Lys Phe Leu Ser Glu
        275                 280             285
Thr Arg Lys Leu Cys Gly His Tyr Leu Ile Ser Ala Ala Lys Val Arg
    290             295                 300
Phe Leu Arg Ser Ser Leu Ala Lys Ala Thr Ser Tyr Gln Glu Val Tyr
305             310                 315                 320
Gln Leu Val Asn Asp Tyr Glu Glu Ala Asp Asp Ser Ser Leu Glu Thr
                325                 330                 335
Phe Val Lys Cys
            340


        <210> 771
        <211> 881
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 771
Ser Ile Gln Gly Pro His Ala Ile Arg Leu Met Lys Lys Ser Leu Ile
1               5               10                  15
Ile Val Glu Ser Pro Ala Lys Ile Lys Thr Leu Gln Lys Leu Leu Gly
            20              25                  30
Ser Glu Phe Val Phe Ala Ser Ser Ile Gly His Ile Val Asp Leu Pro
        35              40                  45
Ala Lys Glu Phe Gly Ile Asp Val Asp His Asp Phe Glu Pro Gln Tyr
    50              55                  60
Gln Val Leu Pro Asp Lys Gln Glu Val Ile Asn His Ile Arg Lys Leu
65              70                  75                  80
Ala Ala Lys Cys Glu Lys Val Tyr Leu Ser Pro Asp Pro Asp Arg Glu
            85                  90                  95
Gly Glu Ala Ile Ala Trp His Ile Ala Asn Gln Leu Pro Asp Ser Pro
            100                 105                 110
Leu Ile Gln Arg Val Ser Phe Asn Ala Ile Thr Lys Asn Ala Val Thr
    115                 120                 125
Glu Ala Leu Lys His Pro Arg Thr Ile Asp Met Ala Leu Val Asn Ala
    130                 135                 140
Gln Gln Ala Arg Arg Leu Leu Asp Arg Ile Val Gly Tyr Lys Ile Ser
145                 150                 155                 160
Pro Ile Leu Ser Arg Lys Leu Gln Gln Arg Ser Gly Ile Ser Ala Gly
                165                 170                 175
Arg Val Gln Ser Val Ala Leu Lys Leu Val Val Asp Arg Glu Lys Ala
            180                 185                 190
Ile Asp Ala Phe Val Pro Val Glu Tyr Trp Asn Leu Arg Val Leu Met
    195                 200                 205
Gln Asp Pro Lys Thr Thr Lys Thr Phe Trp Ala His Leu Tyr Ala Val
    210                 215                 220
Gln Gly Lys Lys Trp Glu Lys Glu Ile Pro Glu Gly Lys Thr Glu Asn
225                 230                 235                 240
Asp Val Leu Leu Ile Asn Ser Glu Glu Lys Ala Arg His Tyr Ala Glu
                245                 250                 255
Leu Leu Glu Lys Ser Ser Tyr Thr Ile Thr Arg Val Glu Ala Lys Ala
            260                 265                 270
Lys Arg Arg Phe Ala Pro Pro Pro Phe Ile Thr Ser Thr Leu Gln Gln
    275                 280                 285
Glu Ala Ser Arg His Phe Arg Phe Ser Ala Ser Arg Thr Met Ser Ile
    290                 295                 300
Ala Gln Thr Leu Tyr Glu Gly Val Asp Leu Asp Ser Glu Asp Ser Thr
305                 310                 315                 320
Gly Leu Ile Thr Tyr Met Arg Thr Asp Ser Val Arg Val Asp Pro Glu
                325                 330                 335
Ala Leu Thr Thr Val Arg Glu Tyr Ile Gln Gln Thr Phe Gly Lys Glu
            340                 345                 350
```

```
Tyr Leu Pro Glu Lys Ala Asn Val Tyr Thr Thr Lys Lys Met Thr Gln
    355             360             365
Asp Ala His Glu Ala Ile Arg Pro Thr Asp Ile Asn Leu Thr Pro Asp
    370             375             380
Lys Leu Lys Asn Lys Leu Ser Asp Asp Gln Phe Lys Val Tyr Asn Leu
385             390             395             400
Ile Trp Lys Arg Phe Val Ala Ser Gln Ile Thr Pro Ala Ile Tyr Asp
            405             410             415
Thr Leu Ala Val Gln Ile Thr Thr Asp Thr Glu Ile Asp Leu Arg Ala
            420             425             430
Ser Gly Ser Leu Leu Lys Phe Lys Gly Phe Leu Ala Val Tyr Glu Glu
            435             440             445
Lys Gln Asp Asp Glu Asn Asp Gln Glu Glu Asp His Pro Leu Pro Pro
    450             455             460
Leu His Ala Gln Asp Ala Leu Ile Lys Glu Glu Val Ser Gln Glu Gln
465             470             475             480
Ala Phe Thr Lys Pro Leu Pro Arg Phe Thr Glu Ala Ser Leu Val Lys
            485             490             495
Glu Leu Glu Lys Ser Gly Ile Gly Arg Pro Ser Thr Tyr Ala Thr Ile
            500             505             510
Met Asn Lys Ile Gln Ser Arg Glu Tyr Thr Thr Lys Glu Asn Gln Arg
    515             520             525
Leu Arg Pro Thr Glu Leu Gly Lys Ile Ile Ser Gln Phe Leu Glu Thr
    530             535             540
Asn Phe Pro Arg Ile Met Asp Ile Gly Phe Thr Ala Leu Met Glu Asp
545             550             555             560
Glu Leu Glu Leu Ile Ala Asp Asn Lys Lys Pro Trp Lys Leu Leu Leu
            565             570             575
Gln Glu Phe Trp Thr Thr Phe Leu Pro Val Val Ile Thr Ala Glu Lys
            580             585             590
Glu Ala Val Ile Pro Arg Ile Leu Thr Asn Ile Glu Cys Ser Lys Cys
    595             600             605
His Lys Gly Lys Leu Val Lys Ile Trp Ser Lys Asn Ser Tyr Phe Tyr
    610             615             620
Gly Cys Ser Glu Tyr Pro Glu Cys Asp Tyr Arg Thr Ser Glu Glu Glu
625             630             635             640
Leu Ala Phe Asn Lys Glu Asp Tyr Ala Glu Asp Thr Pro Trp Asp Ser
            645             650             655
Pro Cys Pro Leu Cys Gly Gly Val Met Lys Val Arg His Gly Arg Tyr
            660             665             670
Gly Thr Phe Leu Gly Cys Glu Lys Tyr Pro Glu Cys Arg Gly Thr Ile
            675             680             685
Ser Ile His Lys Lys Gly Glu Glu Ile Glu Gln Glu Glu Pro Ile Pro
    690             695             700
Cys Pro Ala Ile Gly Cys Asn Gly Lys Ile Phe Lys Lys Arg Ser Arg
705             710             715             720
Tyr Asn Lys Ile Phe Tyr Ser Cys Ser Glu Tyr Pro Glu Cys Ser Val
            725             730             735
Ile Gly Asn Ser Ile Asp Ala Val Ile Thr Lys Tyr Ser Gly Thr Glu
            740             745             750
Lys Ile Pro Tyr Lys Lys Lys Thr Pro Thr Lys Lys Lys Ser Ser Ala
    755             760             765
Lys Thr Thr Lys Ala Ala Lys Thr Pro Ser Lys Lys Gly Lys Ala Lys
    770             775             780
Ser Ser Val Lys Lys Ser Ser Glu Lys Lys Thr Gly Pro Leu Phe Leu
785             790             795             800
Pro Ser Pro Asp Leu Ala Lys Met Ile Gly Asn Glu Pro Val Ser Arg
            805             810             815
Gly Glu Ala Thr Lys Lys Ile Trp Asp Tyr Ile Lys Glu His Gln Leu
            820             825             830
```

```
Gln Ala Pro Glu Asn Lys Lys Leu Leu Val Pro Asp Asn Asn Leu Ala
        835              840              845
Thr Ile Ile Gly Pro Asn Pro Ile Asp Met Phe Gln Leu Ser Lys His
    850              855              860
Leu Ser Gln His Leu Thr Lys Val Ser Asn Asp Glu Ser Ser Ala Ser
865              870              875              880
Ser
```

<210> 772
<211> 270
<212> PRT
<213> Chlamydia pneumoniae

<400> 772

```
Lys Pro Arg Thr Arg Asn Val Glu Lys Leu Glu Phe Val Thr Ser Leu
  1              5                  10                  15
Ser Ser Pro Asp Asp Asp Leu Ile Thr Phe Asn Lys Gln Gly Leu Ile
        20              25              30
Ala Gly Pro Glu Glu Glu Lys Val Ala Phe Leu Val Arg Ser Asn Ala
        35              40              45
Met Leu Asp Ala Gly Pro Glu Thr Pro Ala Ser Phe Pro Glu Ser Leu
    50              55              60
Arg Glu Gln Phe Asp Ile Phe Pro Glu Tyr Val Glu Val Leu Tyr Ser
65              70              75              80
Asn Glu Gly Leu Asp Val Trp Glu Ala Gly Cys Thr Trp Ile Leu Asn
            85              90              95
Asn Glu Val Thr Ile Gln Leu Arg Lys His His Arg Lys Ala Ser Arg
            100             105             110
Trp Leu Gly Met Tyr Ser Arg Asp Glu Val Leu Ala His Glu Ala Val
        115             120             125
His Ala Val Arg Met Lys Phe His Glu Pro Val Phe Glu Glu Val Leu
    130             135             140
Ala Tyr Gln Thr Ser Arg Trp Gly Trp Arg Arg Phe Phe Gly Pro Leu
145             150             155             160
Phe Arg Ser Pro Gly Glu Ser Tyr Leu Leu Leu Phe Phe Thr Ile Leu
            165             170             175
Gly Leu Gly Ile Ser Leu Trp Tyr Pro Ala Gly Ile Leu Ile Met Leu
        180             185             190
Val Leu Pro Met Tyr Phe Leu Met Arg Leu Cys Met Ala Gln Ser Tyr
    195             200             205
Leu Tyr Arg Ala Met Lys Lys Ile Arg Lys Met Leu Gly Val Pro Pro
    210             215             220
Leu Trp Val Leu Leu Arg Leu Thr Asp Lys Glu Ile Lys Met Phe Ala
225             230             235             240
Lys Glu Pro Ile Pro Val Leu Glu His Tyr Ala Arg Lys Arg Lys Leu
            245             250             255
Glu Asn Val Arg Trp Lys Gln Ile Tyr Gln Ser Tyr Phe Val
        260             265             270
```

<210> 773
<211> 456
<212> PRT
<213> Chlamydia pneumoniae

<400> 773

```
Ile Phe Lys Gly Asn Ser Lys Arg Leu Tyr Asp Ser Ser Ala Leu Asp
  1              5                  10                  15
Met Phe Gln Gln Lys Gln Lys Leu Ser Leu Lys Tyr Leu Pro Ser Leu
        20              25              30
```

Arg Met Gln Gln Gly Leu Gln Met Leu Gln Ser Pro Leu Thr Glu Leu
35   40   45
Ser Ser Tyr Val Val Gln Glu Ile Ile Asp Asn Pro Phe Phe Asp Leu
50   55   60
Ser Ser Leu Glu Glu Glu Glu Trp Ser Pro Cys Tyr Arg Pro Thr Asn
65   70   75   80
Ser Thr Phe Ser Tyr Leu Asn Gln Thr Pro Gly Pro Gln Glu Ser Leu
85   90   95
Tyr Thr Arg Leu Leu Pro Gln Ile Glu Glu Ala Phe Ser Thr Ala Glu
100   105   110
Glu Arg Phe Ile Ala His Gln Ile Ala Gly Asn Leu Ser Asp Glu Gly
115   120   125
Leu Phe Leu Arg Asn Pro Glu Asp Phe Ala Gln Glu Leu Glu Leu Pro
130   135   140
Leu Glu Lys Ile His Lys Val Trp Asp Thr Ile Gln Asn Leu Ser Pro
145   150   155   160
Glu Gly Ile Ala Ser Pro Ser Leu Gln Ser Tyr Trp Met Lys Leu Leu
165   170   175
Arg Asn Ser Ser His Gln Gln Ala Tyr Ser Ile Val Arg Asp Cys Tyr
180   185   190
Pro Leu Met Thr Asn Cys Glu Phe Ala Pro Ile Met Lys Lys Phe Ser
195   200   205
Leu Ser Leu Ser Glu Leu Arg Asn Ile Leu Lys Lys Ala Leu Gly Ser
210   215   220
Ile Pro Trp Cys Pro Ala Ala Ala Cys Thr Val Lys Pro Met Val Ser
225   230   235   240
Thr Pro Leu Pro Asp Ile Tyr Leu Phe Tyr Ser Ser Gly Ser Trp Lys
245   250   255
Ile Glu Val Ser Thr Arg Gly Leu Pro Ser Ile Lys Leu Asn Lys Glu
260   265   270
Thr Phe His Phe Tyr Glu His Leu Pro Lys Glu Glu Gln Lys Asn Leu
275   280   285
Ser Gln Gln Ile Leu Ser Ala Lys Trp Leu Ile Lys Asn Leu Arg Lys
290   295   300
Arg Glu Gln Thr Leu Leu Gln Val Met Glu Thr Leu Leu Pro Lys Gln
305   310   315   320
Glu Asp Phe Leu Leu Gly Lys Ile Pro Ala Pro Tyr Pro Leu Gly Ile
325   330   335
Lys Asp Leu Ala Glu Asp Leu Ser Phe His Glu Ser Thr Ile Phe Arg
340   345   350
Ala Ile Glu Asn Lys Ala Val Ala Ala Pro Ile Gly Ile Phe Pro Leu
355   360   365
Lys His Leu Phe Pro Arg Gly Ile His Gln Asp Ser Ser His Ser Lys
370   375   380
Glu Asn Val Leu Gln Trp Ile Arg Gln Trp Ile Ala Thr Glu Gln Thr
385   390   395   400
Pro Leu Ser Asp Ser Val Ile Ser Asp Arg Ile Thr Ala Lys Gly Ile
405   410   415
Pro Cys Ala Arg Arg Thr Val Ala Lys Tyr Arg Ala Gln Leu Lys Ile
420   425   430
Leu Pro Ala Asn Lys Arg Lys Lys Leu Phe Tyr Ile Arg Ser Ser Asn
435   440   445
Ser His Phe Arg Asp Arg Gln Phe
450   455

<210> 774
<211> 644
<212> PRT
<213> Chlamydia pneumoniae

993

<400> 774
```
Lys Leu Gly Leu Ile Met Thr Cys Ile Ser Glu Leu Asn Glu Ala Gln
1               5                   10                  15
Arg Lys Ala Val Thr Ala Pro Leu Asn Pro Val Leu Val Leu Ala Gly
        20                  25                  30
Ala Gly Ala Gly Lys Thr Arg Val Val Thr Tyr Arg Ile Leu His Leu
    35                  40                  45
Ile Asn Gln Gly Ile Ala Pro Arg Glu Ile Leu Ala Val Thr Phe Thr
    50                  55                  60
Asn Lys Ala Ala Arg Glu Leu Lys Glu Arg Ile Val Asn Gln Cys Ala
65                  70                  75                  80
Ser Thr Asn Glu Phe Asp Val Pro Met Val Cys Thr Phe His Ser Leu
                85                  90                  95
Gly Val Phe Ile Leu Arg Arg Ser Ile Asn Leu Leu Asn Arg Glu Asn
                100                 105                 110
Asn Phe Thr Ile Tyr Asp Gln Ser Asp Ala Glu Lys Leu Ile Lys His
            115                 120                 125
Ala Leu Gln Gln His Asn Leu Lys Pro Asn Leu Ala Ser Lys Ile Gln
    130                 135                 140
Ala His Val Ser Gln Ala Lys Asn Arg Leu Leu Phe Pro Glu Asp Leu
145                 150                 155                 160
Asp Pro Asn Asp Tyr Ile Asp Pro Val Val Ser Ile Tyr Gln Glu Tyr
                165                 170                 175
Gln Lys Lys Leu Ile Glu Ala Asn Ala Leu Asp Phe Asp Asp Leu Leu
            180                 185                 190
Phe Leu Thr Val Arg Leu Leu Arg Glu Ser Pro Glu Ala Gln Glu Leu
        195                 200                 205
Tyr Asn Gln Leu Trp Lys Ala Leu Leu Ile Asp Glu Tyr Gln Asp Thr
    210                 215                 220
Asn His Ala Gln Tyr Thr Leu Met Gln Leu Leu Ser Lys Gln His Arg
225                 230                 235                 240
Asn Val Phe Ala Val Gly Asp Pro Asp Gln Ser Ile Tyr Ser Trp Arg
                245                 250                 255
Gly Ala Asn Ile His Asn Ile Leu Asn Phe Glu Asn Asp Tyr Pro Asn
                260                 265                 270
Ala Lys Val Leu Cys Leu Glu Glu Asn Tyr Arg Ser Tyr Gly Asn Ile
            275                 280                 285
Leu Asn Ala Ala Asn Ala Leu Ile Lys Asn Asn Ala Ser Arg Leu Glu
    290                 295                 300
Lys Glu Leu Arg Ser Val Lys Gly Pro Gly Glu Lys Ile Arg Leu Phe
305                 310                 315                 320
Leu Gly Ser Thr Asp Arg Glu Glu Ala Asp Phe Val Ala Ala Glu Ile
                325                 330                 335
Leu Gln Leu His Arg Val Gly Asn Ile Lys Leu Arg Asp Ile Cys Ile
        340                 345                 350
Phe Tyr Arg Thr Asn Ser Gln Ser Arg Thr Phe Glu Asp Ala Leu Leu
    355                 360                 365
Arg Arg Arg Ile Pro Tyr Glu Ile Ile Gly Gly Leu Ser Phe Tyr Lys
    370                 375                 380
Arg Lys Glu Ile Gln Asp Ile Leu Ala Phe Leu Arg Ile Phe Ile Ser
385                 390                 395                 400
Lys Ser Asp Ile Val Ala Phe Asp Arg Thr Val Asn Leu Pro Lys Arg
                405                 410                 415
Gly Ile Gly Ser Thr Thr Ile Phe Ala Leu Thr Gln Tyr Ala Ile Ala
            420                 425                 430
Gln Gly Leu Pro Ile Leu Lys Ala Cys Gln Gln Ala Leu Asp Thr Lys
        435                 440                 445
Asp Val Lys Leu Ser Lys Lys Gln Gln Glu Gly Leu Gln Glu Tyr Leu
    450                 455                 460
Ala Leu Phe Pro Gln Ile Glu His Ala Tyr Asn Thr Leu Ser Leu Arg
465                 470                 475                 480
```

<400> 774
```
Lys Leu Gly Leu Ile Met Thr Cys Ile Ser Glu Leu Asn Glu Ala Gln
1               5                   10                  15
Arg Lys Ala Val Thr Ala Pro Leu Asn Pro Val Leu Val Leu Ala Gly
        20                  25                  30
Ala Gly Ala Gly Lys Thr Arg Val Val Thr Tyr Arg Ile Leu His Leu
    35                  40                  45
Ile Asn Gln Gly Ile Ala Pro Arg Glu Ile Leu Ala Val Thr Phe Thr
    50                  55                  60
Asn Lys Ala Ala Arg Glu Leu Lys Glu Arg Ile Val Asn Gln Cys Ala
65                  70                  75                  80
Ser Thr Asn Glu Phe Asp Val Pro Met Val Cys Thr Phe His Ser Leu
                85                  90                  95
Gly Val Phe Ile Leu Arg Arg Ser Ile Asn Leu Leu Asn Arg Glu Asn
                100                 105                 110
Asn Phe Thr Ile Tyr Asp Gln Ser Asp Ala Glu Lys Leu Ile Lys His
            115                 120                 125
Ala Leu Gln Gln His Asn Leu Lys Pro Asn Leu Ala Ser Lys Ile Gln
    130                 135                 140
Ala His Val Ser Gln Ala Lys Asn Arg Leu Leu Phe Pro Glu Asp Leu
145                 150                 155                 160
Asp Pro Asn Asp Tyr Ile Asp Pro Val Val Ser Ile Tyr Gln Glu Tyr
                165                 170                 175
Gln Lys Lys Leu Ile Glu Ala Asn Ala Leu Asp Phe Asp Asp Leu Leu
            180                 185                 190
Phe Leu Thr Val Arg Leu Leu Arg Glu Ser Pro Glu Ala Gln Glu Leu
        195                 200                 205
Tyr Asn Gln Leu Trp Lys Ala Leu Leu Ile Asp Glu Tyr Gln Asp Thr
    210                 215                 220
Asn His Ala Gln Tyr Thr Leu Met Gln Leu Leu Ser Lys Gln His Arg
225                 230                 235                 240
Asn Val Phe Ala Val Gly Asp Pro Asp Gln Ser Ile Tyr Ser Trp Arg
                245                 250                 255
Gly Ala Asn Ile His Asn Ile Leu Asn Phe Glu Asn Asp Tyr Pro Asn
                260                 265                 270
Ala Lys Val Leu Cys Leu Glu Glu Asn Tyr Arg Ser Tyr Gly Asn Ile
            275                 280                 285
Leu Asn Ala Ala Asn Ala Leu Ile Lys Asn Asn Ala Ser Arg Leu Glu
    290                 295                 300
Lys Glu Leu Arg Ser Val Lys Gly Pro Gly Glu Lys Ile Arg Leu Phe
305                 310                 315                 320
Leu Gly Ser Thr Asp Arg Glu Glu Ala Asp Phe Val Ala Ala Glu Ile
                325                 330                 335
Leu Gln Leu His Arg Val Gly Asn Ile Lys Leu Arg Asp Ile Cys Ile
        340                 345                 350
Phe Tyr Arg Thr Asn Ser Gln Ser Arg Thr Phe Glu Asp Ala Leu Leu
    355                 360                 365
Arg Arg Arg Ile Pro Tyr Glu Ile Ile Gly Gly Leu Ser Phe Tyr Lys
    370                 375                 380
Arg Lys Glu Ile Gln Asp Ile Leu Ala Phe Leu Arg Ile Phe Ile Ser
385                 390                 395                 400
Lys Ser Asp Ile Val Ala Phe Asp Arg Thr Val Asn Leu Pro Lys Arg
                405                 410                 415
Gly Ile Gly Ser Thr Thr Ile Phe Ala Leu Thr Gln Tyr Ala Ile Ala
            420                 425                 430
Gln Gly Leu Pro Ile Leu Lys Ala Cys Gln Gln Ala Leu Asp Thr Lys
        435                 440                 445
Asp Val Lys Leu Ser Lys Lys Gln Gln Glu Gly Leu Gln Glu Tyr Leu
    450                 455                 460
Ala Leu Phe Pro Gln Ile Glu His Ala Tyr Asn Thr Leu Ser Leu Arg
465                 470                 475                 480
```

```
Asp Phe Ile Glu Ser Val Val Arg Ile Thr Gly Tyr Leu Glu Ile Leu
                485                     490                     495
Lys Glu Asp Ala Asp Thr Phe Lys Asp Arg Lys Ser Asn Leu Glu Glu
            500                     505                     510
Leu Tyr His Lys Ala Leu Glu Ser Glu Gln Gln Asn Pro Lys Thr His
        515                     520                     525
Leu Glu Leu Phe Leu Asp Asp Leu Ala Leu Lys Gly Ser Asp Asp Asp
    530                     535                     540
Leu Asn Leu Thr Ala Asp Arg Val Asn Leu Met Thr Leu His Asn Gly
545                     550                     555                     560
Lys Gly Leu Glu Phe Arg Val Ser Phe Leu Val Gly Leu Glu Glu Gln
                565                     570                     575
Leu Leu Pro His Ala Asn Ser Leu Gly Gly Thr Tyr Glu Asn Ile Glu
            580                     585                     590
Glu Glu Arg Arg Leu Cys Tyr Val Gly Ile Thr Arg Ala Gln Asp Leu
        595                     600                     605
Leu Tyr Leu Thr Ala Ala Gln Val Arg Ser Leu Trp Gly Thr Val Arg
    610                     615                     620
Met Met Lys Pro Ser Arg Phe Leu Lys Glu Ile Pro Lys Asp Tyr Met
625                     630                     635                     640
Ile Gln Val Arg


        <210> 775
        <211> 237
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 775
Phe Met Gln Asn Ala Thr Ile Asp Gln Leu Pro Val Ser Trp Gln Glu
1                   5                   10                      15
Gln Leu Pro Leu Cys Trp Arg Glu Gln Leu Lys Glu Glu Trp Ser Lys
            20                      25                      30
Pro Tyr Met Gln Gln Leu Leu Ile Phe Leu Lys Gln Glu Tyr Lys Glu
        35                      40                      45
His Thr Val Tyr Pro Glu Glu Asn Cys Val Phe Ser Ala Leu Arg Ser
    50                      55                      60
Thr Pro Phe Asp Gln Val Arg Val Val Ile Leu Gly Gln Asp Pro Tyr
65                      70                      75                      80
Pro Gly Lys Gly Gln Ala His Gly Leu Ser Phe Ser Val Pro Glu Gly
                85                      90                      95
Gln Arg Leu Pro Pro Ser Leu Ile Asn Ile Phe Arg Glu Leu Lys Thr
            100                     105                     110
Asp Leu Gly Ile Glu Asn His Lys Gly Cys Leu Gln Ser Trp Ala Asn
        115                     120                     125
Gln Gly Ile Leu Leu Leu Asn Thr Val Leu Thr Val Arg Ala Gly Glu
    130                     135                     140
Pro Phe Ser His Ala Gly Lys Gly Trp Glu Leu Phe Thr Asp Ala Ile
145                     150                     155                     160
Val Thr Lys Leu Ile Gln Glu Arg Thr His Ile Ile Phe Val Leu Trp
                165                     170                     175
Gly Ala Ala Ala Arg Lys Lys Cys Glu Leu Leu Phe Asn Ser Lys His
            180                     185                     190
Gln His Ala Val Leu Ser Ser Pro His Pro Ser Pro Leu Ala Ala His
        195                     200                     205
Arg Gly Phe Phe Gly Cys Ser His Phe Ser Lys Ile Asn Tyr Leu Leu
    210                     215                     220
Asn Lys Leu Asn Lys Pro Met Ile Asn Trp Lys Leu Pro
225                     230                     235
```

995

```
<210> 776
<211> 81
<212> PRT
<213> Chlamydia pneumoniae

<400> 776
Leu Glu Ala Pro Met Asn Glu Gly Ile His Ser Val Cys Phe Gln Lys
1               5                   10                  15
Thr Pro Arg Leu Thr Ala Lys Ser Val Val Ser Met Glu Met Leu Leu
            20                  25                  30
Thr Thr Gln Gln Leu Pro Ser Ala Glu Gly Met Pro Ser Val Ala Asn
        35                  40                  45
Leu Glu Ala Asp Phe Leu Arg Ala Glu Ala Leu Leu Ala Glu Met Arg
    50                  55                  60
Glu Ile Arg Gly Cys Leu Glu Gln Ser Leu Arg Thr Leu Val Pro Ser
65                  70                  75                  80
Glu


<210> 777
<211> 209
<212> PRT
<213> Chlamydia pneumoniae

<400> 777
Glu Arg Phe Met Lys Ile Val Ile Ala Ser Ser His Gly Tyr Lys Ile
1               5                   10                  15
Arg Glu Thr Lys Thr Phe Leu Lys Arg Leu Gly Asp Phe Asp Ile Phe
            20                  25                  30
Ser Leu Ser Asp Phe Pro Asp Tyr Lys Leu Pro Gln Glu Gln Gly Asp
        35                  40                  45
Ser Ile Thr Ala Asn Ala Leu Thr Lys Gly Ile His Ala Ala Asn His
    50                  55                  60
Leu Gly Cys Trp Val Ile Ala Asp Asp Thr Met Leu Arg Val Pro Ala
65                  70                  75                  80
Leu Asn Gly Leu Pro Gly Pro Leu Ser Ala Asn Phe Ala Gly Val Gly
                85                  90                  95
Ala Tyr Asp Lys Asp His Arg Lys Lys Leu Leu Asp Leu Met Ser Ser
            100                 105                 110
Leu Glu Ser Leu Val Asp Arg Ser Ala Tyr Phe Glu Cys Cys Val Val
        115                 120                 125
Leu Val Ser Pro Asn Gln Glu Ile Phe Lys Thr Tyr Gly Ile Cys Glu
    130                 135                 140
Gly Tyr Ile Ser His Gln Glu Lys Gly Ser Ser Gly Phe Gly Tyr Asp
145                 150                 155                 160
Pro Ile Phe Val Lys Tyr Asp Tyr Lys Gln Thr Phe Ala Glu Leu Ser
                165                 170                 175
Glu Asp Val Lys Asn Gln Val Ser His Arg Ala Lys Ala Leu Gln Lys
            180                 185                 190
Leu Ala Pro His Leu Gln Ser Leu Phe Glu Lys His Leu Leu Thr Arg
        195                 200                 205
Asp


<210> 778
<211> 436
<212> PRT
<213> Chlamydia pneumoniae
```

<400> 778

```
Phe Ile Phe Val Leu Lys Asn Phe Tyr Asp Cys Leu Leu Met Phe Phe
1               5                   10                  15
Gln Phe Leu Ser Phe Thr Met Lys Lys Ile Phe Tyr Ser Phe Val Leu
            20                  25                  30
Leu Ser Cys Ile Phe Pro Tyr Val Gly Cys Ala Gln Val Phe Val Gly
        35                  40                  45
Leu Asp Arg Ile Phe Ser Glu Gly Glu Tyr Thr Arg Cys Ile Gln Gly
    50                  55                  60
Lys Lys Ile Ala Leu Ile Ser His Ser Ala Ala Ile Asn Ser Arg Gly
65                  70                  75                  80
Gln Asp Ala Leu Ser Val Phe Tyr Ser Arg Lys His Asp Cys Thr Val
                85                  90                  95
Glu Ile Leu Cys Thr Leu Glu His Gly Tyr Tyr Gly Ala Thr Pro Thr
            100                 105                 110
Glu Thr Val Gly Asn Gln Pro Ser Arg Tyr Pro Asn Leu Arg Ser Val
            115                 120                 125
Ser Leu Tyr Gly Val Lys Glu Val Pro Lys Glu Val Ala Glu His Cys
        130                 135                 140
Asp Val Phe Val Tyr Asp Val Gln Asp Ile Gly Val Arg Ser Tyr Ser
145                 150                 155                 160
Phe Val Thr Val Leu Met Gln Ile Val Lys Ala Ser Glu Arg Tyr Gly
                165                 170                 175
Lys Gln Leu Ile Val Leu Asp Arg Pro Asn Pro Met Gly Gly Arg Ile
            180                 185                 190
Val Asp Gly Pro Leu Pro Asn Pro Thr Thr Ser Gly Ser Leu Ala Ile
        195                 200                 205
Pro Tyr Cys Tyr Gly Met Thr Pro Gly Glu Leu Ala Leu Phe Phe Lys
    210                 215                 220
Lys Thr Tyr Ala Pro Asn Ala Asn Val Val Val Ile Pro Met Lys Gly
225                 230                 235                 240
Trp Asn Arg Ser Met Thr Phe Asp Glu Thr Gly Leu Ile Trp Met Pro
                245                 250                 255
Thr Ser Pro Gln Met Pro Asp Pro Gln Ser Pro Phe Phe Tyr Ala Ala
            260                 265                 270
Thr Gly Ile Leu Gly Ala Leu Ser Val Ala Ser Ile Gly Val Gly Tyr
        275                 280                 285
Thr Leu Pro Phe Lys Val Leu Gly Ala Pro Trp Met Asp Gly Glu Lys
    290                 295                 300
Val Ala Asp Glu Leu Asn Arg Met Lys Leu Pro Gly Val Leu Phe Leu
305                 310                 315                 320
Pro Phe Phe Tyr Glu Pro Phe Phe Gly Lys Tyr Lys Met Glu Met Cys
                325                 330                 335
Ser Gly Val Leu Leu Val Leu Gln Asp Pro Lys Ile Phe Tyr Pro Val
            340                 345                 350
Glu Thr Gln Cys Thr Ile Trp Gly Val Leu Lys Ala Leu Tyr Pro Lys
        355                 360                 365
Gln Val Glu Gln Thr Leu Lys Ser Ile Glu Arg Ile Pro Ala Arg Arg
    370                 375                 380
Ser Ser Ile Cys Asn Leu Phe Gly Gly Asp Glu Phe Leu Ser Ile Ser
385                 390                 395                 400
His Lys Glu Arg Tyr Ile Val Trp Pro Leu Arg Arg Leu Cys Lys Glu
                405                 410                 415
Ser Arg Glu Ser Phe His Gln Leu Arg Ser Ser Cys Leu Leu Ser Glu
            420                 425                 430
Tyr Ala Glu Ser
            435
```

997

<210> 779
<211> 531
<212> PRT
<213> Chlamydia pneumoniae

<400> 779

```
Thr Ser Glu Asp Arg Val Val Trp Val Phe Lys Ser Gln Phe Glu Gly
1               5                   10                  15
Leu Ser Ala Leu Lys Arg Gly Val His Ala Leu Thr Lys Ala Val Thr
            20                  25                  30
Pro Ala Phe Gly Pro Arg Gly Tyr Asn Val Val Ile Lys Lys Gly Lys
        35                  40                  45
Ala Pro Ile Val Leu Thr Lys Asn Gly Ile Arg Ile Ala Lys Glu Ile
    50                  55                  60
Ile Leu Gln Asp Ala Phe Glu Ser Leu Gly Val Lys Leu Ala Lys Glu
65                  70                  75                  80
Ala Leu Leu Lys Val Val Glu Gln Thr Gly Asp Gly Ser Thr Thr Ala
                85                  90                  95
Leu Val Val Ile Asp Ala Leu Phe Thr Gln Gly Leu Lys Gly Ile Ala
                100                 105                 110
Ala Gly Leu Asp Pro Gln Glu Ile Lys Ala Gly Ile Leu Leu Ser Val
            115                 120                 125
Glu Met Val Tyr Gln Gln Leu Gln Arg Gln Ala Ile Glu Leu Gln Ser
        130                 135                 140
Pro Lys Asp Val Leu His Val Ala Met Val Ala Ala Asn His Asp Val
145                 150                 155                 160
Thr Leu Gly Thr Val Val Ala Thr Val Ile Ser Gln Ala Asp Leu Lys
                165                 170                 175
Gly Val Phe Ser Ser Lys Asp Ser Gly Ile Ser Lys Thr Arg Gly Leu
            180                 185                 190
Gly Lys Arg Val Lys Ser Gly Tyr Leu Ser Pro Tyr Phe Val Thr Arg
        195                 200                 205
Pro Glu Thr Met Asp Val Val Trp Glu Glu Ala Leu Val Leu Ile Leu
    210                 215                 220
Ser His Ser Leu Val Ser Leu Ser Glu Glu Leu Ile Arg Tyr Leu Glu
225                 230                 235                 240
Leu Ile Ser Glu Gln Asn Thr His Pro Leu Val Ile Ile Ala Glu Asp
                245                 250                 255
Phe Asp Gln Asn Val Leu Arg Thr Leu Ile Leu Asn Lys Leu Arg Asn
            260                 265                 270
Gly Leu Pro Val Cys Ala Val Lys Ala Pro Gly Ser Arg Glu Leu Arg
        275                 280                 285
Gln Val Val Leu Glu Asp Leu Ala Ile Leu Thr Gly Ala Thr Leu Ile
    290                 295                 300
Gly Gln Glu Ser Glu Asn Cys Glu Ile Pro Val Ser Leu Asp Val Leu
305                 310                 315                 320
Gly Arg Val Lys Gln Val Met Ile Thr Lys Glu Thr Phe Thr Phe Leu
            325                 330                 335
Glu Gly Gly Gly Asp Ala Glu Ile Ile Gln Ala Arg Lys Gln Glu Leu
            340                 345                 350
Cys Leu Ala Ile Ala Arg Ser Thr Ser Glu Ser Glu Cys Gln Glu Leu
        355                 360                 365
Glu Glu Arg Leu Ala Ile Phe Ile Gly Ser Ile Pro Gln Val Gln Ile
    370                 375                 380
Thr Ala Asp Thr Asp Thr Glu Gln Arg Glu Arg Gln Phe Gln Leu Glu
385                 390                 395                 400
Ser Ala Leu Arg Ala Thr Lys Ala Ala Met Lys Gly Gly Ile Val Pro
            405                 410                 415
Gly Gly Gly Val Ala Phe Leu Arg Ala Ala His Ala Ile Glu Val Pro
            420                 425                 430
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998

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Ala Asn Leu Ser Ser Gly Met Thr Phe Gly Phe Glu Thr Leu Leu Gln
        435                 440                 445
Ala Val Arg Thr Pro Leu Lys Val Leu Ala Gln Asn Cys Gly Arg Ser
    450                 455                 460
Ser Glu Glu Val Ile His Thr Ile Leu Ser His Glu Asn Pro Arg Phe
465                 470                 475                 480
Gly Tyr Asn Gly Met Thr Asp Thr Phe Glu Asp Leu Val Asp Ala Gly
            485                 490                 495
Ile Cys Asp Pro Leu Ile Val Thr Thr Ser Ser Leu Lys Cys Ala Val
            500                 505                 510
Ser Val Ser Cys Leu Leu Leu Thr Ser Ser Phe Phe Ile Ser Ser Arg
        515                 520                 525
Thr Lys Thr
    530


        <210> 780
        <211> 231
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 780
Ala Pro Val Ala Gln Ser Asp Arg Val Pro Gly Tyr Glu Pro Gly Gly
1               5                   10                  15
Gln Arg Phe Glu Ser Ser Leu Val Arg Asn Asn Lys Arg Val Glu Glu
            20                  25                  30
Glu Val Phe Met Thr Leu Ser Leu Val Gly Lys Glu Ala Pro Asp Phe
        35                  40                  45
Val Ala Gln Ala Val Val Asn Gly Glu Thr Cys Thr Val Ser Leu Lys
    50                  55                  60
Asp Tyr Leu Gly Lys Tyr Val Val Leu Phe Phe Tyr Pro Lys Asp Phe
65                  70                  75                  80
Thr Tyr Val Cys Pro Thr Glu Leu His Ala Phe Gln Asp Ala Leu Gly
            85                  90                  95
Glu Phe His Thr Arg Gly Ala Glu Val Ile Gly Cys Ser Val Asp Asp
            100                 105                 110
Ile Ala Thr His Gln Gln Trp Leu Ala Thr Lys Lys Lys Gln Gly Gly
        115                 120                 125
Ile Glu Gly Ile Thr Tyr Pro Leu Leu Ser Asp Glu Asp Lys Val Ile
        130                 135                 140
Ser Arg Ser Tyr His Val Leu Lys Pro Glu Glu Glu Leu Ser Phe Arg
145                 150                 155                 160
Gly Val Phe Leu Ile Asp Lys Gly Gly Ile Ile Arg His Leu Val Val
                165                 170                 175
Asn Asp Leu Pro Leu Gly Arg Ser Ile Glu Glu Glu Leu Arg Thr Leu
            180                 185                 190
Asp Ala Leu Ile Phe Phe Glu Thr Asn Gly Leu Val Cys Pro Ala Asn
        195                 200                 205
Trp His Glu Gly Glu Arg Ala Met Ala Pro Asn Glu Glu Gly Leu Gln
    210                 215                 220
Asn Tyr Phe Gly Thr Ile Asp
225                 230


        <210> 781
        <211> 136
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 781
Arg Phe Asp Leu Ile Phe Gln Met Lys Phe Thr Val Ala Leu Phe Gly
1               5                   10                  15
```

Glu Ala Glu Lys Gly Ser Tyr Asp Thr Ala Tyr Phe Cys Arg Ser Leu
                20   25   30
Val Asp Leu His Asn Tyr Leu Gly Asp Val Ser Ser Pro Gly Ile Thr
        35   40   45
Leu Ala Ile Lys Thr Leu Leu Ser Asp Tyr Asn Val Val Tyr Phe Arg
    50   55   60
Val Arg Glu Glu Gly Tyr Cys Val Asp Ser Tyr Phe Phe Gly Leu His
65   70   75   80
Phe Leu Asn Thr Gln Thr Thr Leu Lys Asn Ile Ile Ala Ile Gly Leu
                85   90   95
Pro Gly Val Gly Asn Gln His Ile Ile Glu Ala Ser Arg Ser Leu Cys
            100   105   110
Gln Lys His Asn Ser Leu Leu Leu Phe Phe Asp His Asp Leu Tyr Asp
        115   120   125
Leu Leu Thr Phe Asn Gln Pro Phe
        130   135

<400> 782
His Gly Asn Lys Ile Ala Val Gln Ser Leu Arg Phe Met His Ala Lys
1   5   10   15
Leu Ser Phe Phe Ile Leu Leu Ser Leu Leu Phe Ser Gly Ile Asp Cys
                20   25   30
Ser Arg Leu His Ala Ala Gly Arg Ser Pro Ser Leu Gln Gly Val Leu
        35   40   45
Ala Glu Ile Glu Asp Ile Ser Ala Lys Leu Ala Ser His Glu Val Glu
    50   55   60
Ile Val Met Leu Ser Glu Arg Leu Asp Glu Gln Asp Ser Lys Cys Gln
65   70   75   80
Lys Trp Thr Ala Ala Lys Pro Glu Thr Leu Ala Gln Lys Ile Arg Glu
                85   90   95
Leu Glu Ser Asp Gln Lys Ala Leu Ala Lys Thr Leu Ala Val Leu Thr
            100   105   110
Thr Ser Val Lys Asp Leu Gln Thr Asn Leu Gln Ser Lys Leu Gln Glu
        115   120   125
Ile Gln Lys Asp His Arg Ala Leu Ala Gln Asp Leu Arg Leu Val Arg
    130   135   140
Arg Ser Leu Leu Ala Leu Val Asp Ser Ser Ser Pro Gly Ala Tyr Ala
145   150   155   160
Asp Phe Ser Asp Pro Val Pro Glu Asn Ile Tyr Ile Val Arg Glu Gly
                165   170   175
Asp Ser Leu Ser Lys Ile Ala Lys Lys Tyr Lys Leu Ser Val Thr Glu
            180   185   190
Leu Lys Lys Ile Asn Lys Leu Asp Ser Asp Ala Ile Tyr Ala Gly Gln
        195   200   205
Arg Leu Cys Leu Gln Arg Asn Lys Gln
    210   215

<400> 783
Gln Asn Cys Tyr Arg Ser Arg Arg Lys Thr Val Pro Leu Leu Gly Cys
1   5   10   15

```
Phe Pro Ser Ala Thr Asp Lys Glu Asn Thr Met Asn Ile His Ser Leu
            20                  25              30
Trp Lys Leu Cys Thr Leu Leu Ala Leu Leu Ala Leu Pro Ala Cys Ser
        35              40                  45
Leu Ser Pro Asn Tyr Gly Trp Glu Asp Ser Cys Asn Thr Cys His His
    50                  55                  60
Thr Arg Arg Lys Lys Pro Ser Ser Phe Gly Phe Val Pro Leu Tyr Thr
65                  70                  75                  80
Glu Glu Asp Phe Asn Pro Asn Phe Thr Phe Gly Glu Tyr Asp Ser Lys
                85                  90                  95
Glu Glu Lys Gln Tyr Lys Ser Ser Gln Val Ala Ala Phe Arg Asn Ile
            100                 105                 110
Thr Phe Ala Thr Asp Ser Tyr Thr Ile Lys Gly Glu Glu Asn Leu Ala
        115                 120                 125
Ile Leu Thr Asn Leu Val His Tyr Met Lys Lys Asn Pro Lys Ala Thr
    130                 135                 140
Leu Tyr Ile Glu Gly His Thr Asp Glu Arg Gly Ala Ala Ser Tyr Asn
145                 150                 155                 160
Leu Ala Leu Gly Ala Arg Arg Ala Asn Ala Ile Lys Glu His Leu Arg
                165                 170                 175
Lys Gln Gly Ile Ser Ala Asp Arg Leu Ser Thr Ile Ser Tyr Gly Lys
            180                 185                 190
Glu His Pro Leu Asn Ser Gly His Asn Glu Leu Ala Trp Gln Gln Asn
        195                 200                 205
Arg Arg Thr Glu Phe Lys Ile His Ala Arg
    210                 215


            <210> 784
            <211> 435
            <212> PRT
            <213> Chlamydia pneumoniae


            <400> 784
Gly Asp Ile Gly Met Leu Arg Gln Leu Cys Phe Gln Val Phe Phe Phe
 1               5                  10                  15
Cys Phe Ala Ser Leu Val Tyr Ala Glu Glu Leu Glu Val Val Val Arg
            20                  25                  30
Ser Glu His Ile Thr Leu Pro Ile Glu Val Ser Cys Gln Thr Asp Thr
        35                  40                  45
Lys Asp Pro Lys Ile Gln Lys Tyr Leu Ser Ser Leu Thr Glu Ile Phe
    50                  55                  60
Cys Lys Asp Ile Ala Leu Gly Asp Cys Leu Gln Pro Thr Ala Ala Ser
65                  70                  75                  80
Lys Glu Ser Ser Ser Pro Leu Ala Ile Ser Leu Arg Leu His Val Pro
                85                  90                  95
Gln Leu Ser Val Val Leu Leu Gln Ser Ser Lys Thr Pro Gln Thr Leu
            100                 105                 110
Cys Ser Phe Thr Ile Ser Gln Asn Leu Ser Val Asp Arg Gln Lys Ile
        115                 120                 125
His His Ala Ala Asp Thr Val His Tyr Ala Leu Thr Gly Ile Pro Gly
    130                 135                 140
Ile Ser Ala Gly Lys Ile Val Phe Ala Leu Ser Ser Leu Gly Lys Asp
145                 150                 155                 160
Gln Lys Leu Lys Gln Gly Glu Leu Trp Thr Thr Asp Tyr Asp Gly Lys
                165                 170                 175
Asn Leu Ala Pro Leu Thr Thr Glu Cys Ser Leu Ser Ile Thr Pro Lys
            180                 185                 190
Trp Val Gly Val Gly Ser Asn Phe Pro Tyr Leu Tyr Val Ser Tyr Lys
            195                 200                 205
Tyr Gly Val Pro Lys Ile Phe Leu Gly Ser Leu Glu Asn Thr Glu Gly
    210                 215                 220


                        1001
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```
Lys Lys Val Leu Pro Leu Lys Gly Asn Gln Leu Met Pro Thr Phe Ser
225                 230                 235                 240
Pro Arg Lys Lys Leu Leu Ala Phe Val Ala Asp Thr Tyr Gly Asn Pro
                245                 250                 255
Asp Leu Phe Ile Gln Pro Phe Ser Leu Thr Ser Gly Pro Met Gly Arg
            260                 265                 270
Pro Arg Arg Leu Leu Asn Glu Asn Phe Gly Thr Gln Gly Asn Pro Ser
        275                 280                 285
Phe Asn Pro Glu Gly Ser Gln Leu Val Phe Ile Ser Asn Lys Asp Gly
    290                 295                 300
Arg Pro Arg Leu Tyr Ile Met Ser Leu Asp Pro Glu Pro Gln Ala Pro
305                 310                 315                 320
Arg Leu Leu Thr Lys Lys Tyr Arg Asn Ser Ser Cys Pro Ala Trp Ser
                325                 330                 335
Pro Asp Gly Lys Lys Ile Ala Phe Cys Ser Val Ile Lys Gly Val Arg
            340                 345                 350
Gln Ile Cys Ile Tyr Asp Leu Ser Ser Gly Glu Asp Tyr Gln Leu Thr
        355                 360                 365
Thr Ser Pro Thr Asn Lys Glu Ser Pro Ser Trp Ala Ile Asp Ser Arg
    370                 375                 380
His Leu Val Phe Ser Ala Gly Asn Ala Glu Glu Ser Glu Leu Tyr Leu
385                 390                 395                 400
Ile Ser Leu Val Thr Lys Lys Thr Asn Lys Ile Ala Ile Gly Val Gly
                405                 410                 415
Glu Lys Arg Phe Pro Ser Trp Gly Ala Phe Pro Gln Gln Pro Ile Lys
            420                 425                 430
Arg Thr Leu
        435


        <210> 785
        <211> 263
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 785
Ile Met Met Lys Tyr Leu Pro Tyr Ile Ala Ile Thr Ala Cys Ile His
1               5                   10                  15
Gly Gly Ile Leu Leu Leu Val Phe Ala Ser Pro Leu Pro Lys Lys Arg
            20                  25                  30
Leu Gln Pro Lys Ala Phe Gln Glu Lys Leu Val Thr Ile Gln Pro Lys
        35                  40                  45
Pro Pro Val Pro Thr Pro Ser Val Val Val Asp Pro Ala Lys Thr Ile
    50                  55                  60
Arg Pro Ser Val Ala Thr Gln Pro Gln Lys Gln Ala Lys Cys Ser Pro
65                  70                  75                  80
Pro Gln Glu Asn Val Gln Lys Ala Leu Gln Lys Pro Ile Pro Lys Val
                85                  90                  95
Ile Lys Thr Glu Pro Pro Lys Pro Ser Pro Ala Pro Thr Val Ala Lys
            100                 105                 110
Lys Thr Thr Ala Thr Glu Lys Pro Pro Pro Ser Thr Thr Lys Lys Asn
        115                 120                 125
Thr Gln Leu Ser Lys Thr Gln Leu Gln Thr Leu Ser Glu Val Ala Gln
    130                 135                 140
Ala Leu Ser Leu His Val Asp Lys Ile Glu Lys Ser Glu Thr Ser Leu
145                 150                 155                 160
Lys Asn Ile Ser Trp Pro Ser Thr Ala Gln Leu Thr Met His Ser Glu
                165                 170                 175
Leu Lys Ala Thr Gln Glu Asp Glu Leu Cys Glu Leu Phe Arg Thr His
            180                 185                 190
Ile Ala Leu Pro Ser Lys Gly Tyr Val Arg Ile Lys Leu Val Leu Ser
        195                 200                 205
```

1002

```
Pro Asn Gly Glu Ile Gln Glu Cys Ser Phe Leu Ser Glu Val Ser Ala
210                     215                 220
Ala Asp Lys Gln Leu Leu Thr Gln Arg Ile Gln Ala Leu Pro Phe Gln
225                 230                 235                 240
Lys Phe Leu Glu Lys Tyr Lys Val Ser Lys Asn Ile Ser Phe His Ile
                245                 250                 255
Lys Leu Val Ser Asn Glu Ser
            260
```

<210> 786
<211> 156
<212> PRT
<213> Chlamydia pneumoniae

<400> 786
```
Asp Arg Ala Asp Ser Ile Phe Thr Thr Glu Phe Tyr Arg Ser Gln Ile
1               5                   10                  15
Pro Gln Tyr Lys Leu Met Lys Tyr Arg Phe Thr Glu Glu Ile Glu Glu
            20                  25                  30
Glu Pro Leu Val Asn Leu Thr Pro Leu Ile Asp Ile Val Phe Val Ile
            35                  40                  45
Leu Met Ala Phe Ile Val Ala Val Pro Leu Ile Lys Leu Asp Ser Ile
        50                  55                  60
Ala Leu Ala Pro Gly Thr Gln Glu Gln Glu Val Leu Ser Ser Glu Asn
65                  70                  75                  80
Asp Ser Ile Ala Val Ile Lys Val Phe Ala Asp His Ser Leu Thr Leu
                85                  90                  95
Asn Glu His Pro Ile Thr Leu Gln Glu Leu Thr Val Arg Leu Thr Leu
                100                 105                 110
Leu His Lys Ala Tyr Pro Glu Lys Thr Pro Leu Leu Leu Gln Asp Gly
        115                 120                 125
Glu Thr Ser Phe Arg Thr Tyr Gln Asn Val Lys Asn Ala Ile Glu Ala
        130                 135                 140
Ala Gly Phe His Glu Leu His Val Ala Leu Gln Asn
145                 150                 155
```

<210> 787
<211> 248
<212> PRT
<213> Chlamydia pneumoniae

<400> 787
```
Asp His Leu Tyr Phe Glu Thr Leu Ser Val Asn Lys Asp Phe Tyr Ser
1               5                   10                  15
Met Val His Phe Ser His Asn Pro Ile Ile Gln Ala Tyr Thr Glu Ala
            20                  25                  30
Asp Phe Phe Gly Lys Ser Ile Phe Phe Cys Leu Leu Ile Leu Ser Val
        35                  40                  45
Cys Thr Trp Thr Val Leu His Gln Lys Leu Ala Ile Gln Lys Asn Phe
        50                  55                  60
Leu Lys Ala Gly Lys Ser Leu Lys Asp Phe Leu Ile Lys Asn Arg His
65                  70                  75                  80
Ala Pro Leu Ser Leu Asp Ile His Pro Glu Leu Ser Pro Phe Ala Asp
                85                  90                  95
Leu Tyr Phe Thr Ile Lys Arg Gly Thr Leu Glu Leu Leu Asp Lys Asn
            100                 105                 110
Arg Gln Ser Ala Pro Asp Arg Gly Pro Ile Leu Ser Ser Glu Asp Ile
        115                 120                 125
Gln Ser Leu Glu Thr Leu Leu Gly Ala Ile Met Pro Lys Tyr Lys Ala
        130                 135                 140
```

Leu Leu His Lys Asn Ser Phe Ile Pro Ala Thr Thr Ile Ser Leu Ala
145   150   155   160
Pro Phe Leu Gly Leu Leu Gly Thr Val Trp Gly Ile Leu Val Ala Phe
                165   170   175
Thr His Ile Ser Ser Gly Ser Ser Gly Asn Ser Ala Ile Met Glu Gly
                180   185   190
Leu Ala Thr Ala Leu Gly Thr Thr Ile Ile Gly Leu Phe Val Ala Ile
                195   200   205
Pro Ser Leu Ile Ala Phe Asn Tyr Leu Lys Ala His Ser Ser Glu Leu
210   215   220
Ile Ser Glu Ile Glu Gln Thr Ala Tyr Leu Leu Leu Asn Ser Ile Glu
225   230   235   240
Val Lys Tyr Arg Asn Thr Asn Leu
                245

<210> 788
<211> 719
<212> PRT
<213> Chlamydia pneumoniae

<400> 788
Asn His Gly Val Ile Leu Asn Lys Phe Lys Thr Tyr Leu Gln Thr Ala
1   5   10   15
Leu Ile Ala Pro Phe Phe Ser Phe Pro Ala Leu Ser Gly Ser Phe Ser
                20   25   30
Ser Ile Gln Ala Glu Glu Ile Thr Gln Gln Val Asn His Pro Gly Ala
                35   40   45
Glu Leu Leu Ser Glu Gly Ser Tyr Ile Pro Gly Leu Gln Thr Phe Arg
    50   55   60
Leu Gly Ile Lys Ile Thr Ala Ser Lys Gly Ser His Ile Tyr Trp Lys
65   70   75   80
Asn Pro Gly Glu Ile Gly Ser Pro Leu Lys Ile Ser Trp Gln Leu Pro
                85   90   95
Lys Gly Phe Val Val Glu Glu Glu His Trp Pro Thr Pro Lys Val Phe
                100   105   110
Glu Glu Glu Gly Thr Thr Phe Phe Gly Tyr Glu Asp Ser Ala Leu Ile
                115   120   125
Val Ala Asp Val Arg Ala Pro Glu Gly Tyr Thr Pro Gly Gln Glu Val
    130   135   140
Glu Leu Arg Ala Gln Val Glu Trp Leu Ala Cys Gly Asp Ser Cys Leu
145   150   155   160
Pro Gly Asn Val Asp Leu Lys Leu Thr Leu Pro Tyr Glu Glu Lys Glu
                165   170   175
Pro Ser Leu Tyr Pro Asp Thr His Ala Glu Phe Thr Lys Thr Leu His
    180   185   190
Ala Gln Pro Arg Val Leu Glu Asn Asp His Ser Val Gln Val Ala Gln
    195   200   205
Gly Lys Gly Asn Glu Ile Ile Leu Asn Ile Ser Lys Lys Ile Asn Ala
    210   215   220
Thr Lys Ala Trp Phe Val Ser Glu Lys Ala Asp Lys Leu Phe Ala Tyr
225   230   235   240
Ala Glu Thr Ser Tyr Ser Gly Gly Thr Gly Thr Ala Trp Arg Leu Lys
                245   250   255
Val Lys Asn Leu Ser Gly Val Gln Lys Asn Glu Lys Leu His Gly Ile
                260   265   270
Leu Leu Leu Ala Asp His Thr Gly Arg Pro Val Glu Ser Leu Thr Ile
    275   280   285
His Ser Glu Val Leu Gly Gln Thr Gly Ser Ala Val Ala Gly Leu Ser
    290   295   300
Gln Tyr Ile Thr Ile Leu Ile Met Ala Phe Leu Gly Gly Val Leu Leu
305   310   315   320

1004

```
Asn Ile Met Pro Cys Val Leu Pro Leu Val Thr Leu Lys Val Tyr Gly
                325                      330                 335
Leu Ile Lys Ser Ala Gly Glu His Arg Ser Ser Val Ile Ala Asn Gly
                340                 345                 350
Leu Trp Phe Thr Leu Gly Val Val Gly Cys Phe Trp Gly Leu Ala Gly
                355                 360                 365
Val Ala Phe Ile Leu Lys Val Leu Gly His Asn Ile Gly Trp Gly Phe
        370                 375                 380
Gln Leu Gln Glu Pro Met Phe Val Ala Thr Leu Ile Ile Val Phe Phe
385                 390                 395                 400
Leu Phe Ala Leu Ser Ser Leu Gly Leu Phe Glu Met Gly Thr Met Phe
                405                 410                 415
Ala Asn Leu Gly Gly Lys Leu Gln Ser Ser Glu Met Lys Ser Ser Asn
                420                 425                 430
Asn Lys Ala Val Gly Ala Phe Phe Asn Gly Ile Leu Ala Thr Leu Val
            435                 440                 445
Thr Thr Pro Cys Thr Gly Pro Phe Leu Gly Ser Val Leu Gly Leu Val
        450                 455                 460
Met Ser Leu Ser Phe Leu Gln Gln Leu Leu Ile Phe Thr Ala Ile Gly
465                 470                 475                 480
Leu Gly Met Ala Ser Pro Tyr Leu Val Phe Ser Val Phe Pro Lys Met
                485                 490                 495
Leu Ser Val Leu Pro Lys Pro Gly Gly Trp Met Ser Thr Phe Lys Gln
                500                 505                 510
Leu Thr Gly Phe Met Leu Leu Val Thr Val Thr Trp Leu Val Trp Ile
            515                 520                 525
Phe Gly Ser Glu Thr Ser Thr Thr Ser Val Val Val Leu Leu Gly Gly
        530                 535                 540
Leu Trp Leu Ala Gly Leu Gly Ala Trp Ile Leu Gly Arg Trp Gly Thr
545                 550                 555                 560
Pro Val Ser Pro Lys Lys Gln Arg Val Cys Ala Ser Leu Leu Phe Phe
                565                 570                 575
Ala Phe Leu Gly Gly Ala Ile Ser Val Ser Gly Leu Ala Ser His Tyr
            580                 585                 590
Phe Ala Glu Pro Gln Gln Thr Val Ser Val Asn Glu Asp Ser Leu Trp
        595                 600                 605
Gln Pro Phe Ser Leu Glu Lys Leu Ala Gln Leu Arg Ala Gln Gly Arg
    610                 615                 620
Pro Val Phe Val Asn Phe Thr Ala Lys Trp Cys Leu Thr Cys Gln Met
625                 630                 635                 640
Asn Lys Pro Val Leu Tyr Gly Asp Ala Val Gln Lys Met Phe Glu Thr
                645                 650                 655
His Gly Ile Val Thr Leu Glu Ala Asp Trp Thr Arg Lys Asp Pro Gly
            660                 665                 670
Ile Thr Glu Glu Leu Ala Arg Leu Gly Arg Ala Ser Val Pro Ser Tyr
        675                 680                 685
Val Tyr Tyr Pro Gly Asp Asn Ser Ala Pro Val Val Leu Pro Glu Lys
    690                 695                 700
Ile Thr Gln Asn Leu Leu Glu Asp Val Val Ser Arg Phe Val Arg
705                 710                 715
```

```
        <400> 789
Thr Arg Arg Gln Pro Val Asp Leu Ala Asp Ala His Val His Leu Ser
1               5                   10                  15
Asp Asp Ala Phe Glu Glu Asp Ile Asn Ser Val Leu Gln Arg Ala Gln
            20                  25                  30
```

Asp Ser Gly Val Ser Leu Val Val Asn Val Thr Thr Thr Glu Lys Glu
        35   40   45
Leu Asn Arg Ser Phe Ala Tyr Ala Glu Arg Phe Pro Lys Ile Arg Phe
    50   55   60
Cys His Val Gly Gly Thr Pro Pro Gln Asp Val Asp Gln Asp Ile Glu
65   70   75   80
Glu Asp Tyr Arg Asn Phe His Ala Ala Ala His Ser Lys Lys Leu Ala
                85   90   95
Ala Ile Gly Glu Val Gly Leu Asp Tyr Cys Phe Ala Thr Glu Glu Gly
            100   105   110
Ile Ala Arg Gln Lys Glu Val Leu Gln Arg Tyr Leu Ala Leu Ser Leu
        115   120   125
Glu Cys Glu Leu Pro Leu Val Val His Cys Arg Gly Ala Phe Asn Asp
    130   135   140
Phe Phe Arg Met Leu Asp Gln Tyr Tyr His Asn Asp Pro Arg Ser Arg
145   150   155   160
Pro Gly Met Leu His Cys Phe Thr Gly Thr Leu Glu Glu Ala Gln Glu
                165   170   175
Leu Ile Ser Arg Gly Trp Phe Ile Ser Ile Ser Gly Ile Val Thr Phe
                180   185   190
Lys Asn Ala Gln Asp Leu Arg Asp Leu Val Val Glu Leu Pro Leu Glu
        195   200   205
His Leu Leu Ile Glu Thr Asp Ala Pro Phe Leu Ala Pro Val Pro Tyr
    210   215   220
Arg Gly Lys Lys Asn Glu Pro Ala His Val Leu His Thr Ile Asn Ala
225   230   235   240
Val Ala Asn Val Lys Gly Met Phe Pro Gln Glu Leu Ala Ala Leu Ala
                245   250   255
Tyr Lys Asn Val Leu Arg Phe Leu His Gly
                260   265

        <210> 790
        <211> 304
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 790
Ser Leu Val Lys Ser Leu Arg Met Ser Arg His Glu Ile Cys Pro Glu
  1   5   10   15
Val Ser His Lys Lys Gly Lys Tyr Tyr Ser Thr Phe Ile Phe Arg Cys
            20   25   30
Ile His Ser Leu Ala Gly Ile Ala Phe Thr Phe Phe Leu Cys Glu His
        35   40   45
Leu Phe Thr Asn Met Leu Ala Ser Ser Tyr Phe Ser Gln Gly Lys Gly
    50   55   60
Phe Val Ala Met Val Asn Gly Phe His Lys Ile Pro Gly Leu Lys Ile
65   70   75   80
Ile Glu Val Ala Gly Leu Val Leu Pro Phe Leu Cys His Ala Ile Ile
                85   90   95
Gly Ile Val Tyr Leu Phe Gln Gly Lys Ser Asn Cys Tyr Ser Gly Asp
            100   105   110
Gly Ser Arg Pro His Leu Arg Tyr Ala Lys Asn Tyr Ser Tyr Thr Trp
        115   120   125
Gln Arg Trp Thr Ala Trp Ile Leu Leu Phe Gly Ile Ala Phe His Val
        130   135   140
Val His Leu Arg Phe Ile Arg Tyr Pro Val His Val Asp Ile His Gly
145   150   155   160
Thr Thr Tyr Tyr Ala Val Asp Ile Gln Pro Ser Arg Tyr Asp Val Ile
                165   170   175
Val Arg Gly Thr Lys Gly Phe Leu Thr Leu Asn Leu Pro Asn Thr Glu
            180   185   190

        1006

Ala Ser Ser Ile Glu Val Ser Arg His Asp Leu Gly Gly Ala Asp Ala
195   200   205
Ala Leu Leu Ser Glu Arg Asn Ser Tyr Leu Leu Thr Pro Ser Ala Gly
210   215   220
Thr Ala Phe Leu Tyr Val Val Arg Asp Ala Leu Gly Ser Leu Phe Ile
225   230   235   240
Ala Leu Leu Tyr Thr Ile Leu Val Ile Ala Ala Ala Phe His Gly Phe
                245   250   255
Asn Gly Leu Trp Thr Phe Cys Cys Arg Trp Gly Val Val Val Ser Leu
                260   265   270
Arg Met Gln Gly Val Leu Arg Ile Val Cys Tyr Leu Ala Met Ile Val
275   280   285
Val Thr Phe Met Gly Val Ser Ala Val Trp Asn Leu Tyr Ser Val Ala
290   295   300

<210> 791
<211> 627
<212> PRT
<213> Chlamydia pneumoniae

<400> 791
Gln Met Asp Glu Asn Arg Lys Val Ile Val Val Gly Gly Gly Leu Ala
1   5   10   15
Gly Leu Ser Ala Ala Met Gln Leu Ala Asn Leu Gly Ile Ile Val Glu
                20   25   30
Leu Val Ser Leu Thr Lys Val Lys Arg Ser His Ser Val Cys Ala Gln
        35   40   45
Gly Gly Ile Asn Ala Ala Leu Asn Leu Lys Pro Glu Glu Glu Asp Ser
        50   55   60
Pro Tyr Val His Ala Tyr Asp Thr Ile Lys Gly Gly Asp Phe Leu Ala
65   70   75   80
Asp Gln Pro Pro Val Leu Glu Met Cys Leu Ala Ala Pro Arg Ile Ile
                85   90   95
Lys Met Leu Asp Asn Phe Gly Cys Pro Phe Asn Arg Gly Pro Ser Gly
                100   105   110
Asn Leu Asp Val Arg Arg Phe Gly Gly Thr Leu Tyr His Arg Thr Val
        115   120   125
Phe Cys Gly Ala Ser Thr Gly Gln Gln Leu Met Tyr Thr Leu Asp Glu
        130   135   140
Gln Val Arg Arg Arg Glu His Ala Gly Arg Val Ile Lys Arg Glu Asn
145   150   155   160
His Glu Phe Val Arg Leu Val Thr Asp His Ser Gly Arg Ala Cys Gly
                165   170   175
Ile Ile Leu Met Asn Leu Phe Asn Asn Arg Leu Glu Ile Leu Arg Gly
        180   185   190
Asp Ala Val Ile Ile Ala Thr Gly Gly Pro Gly Val Ile Phe Lys Met
        195   200   205
Ser Thr Asn Ser Thr Phe Cys Thr Gly Ala Ala Asn Gly Arg Leu Phe
210   215   220
Leu Gln Gly Met Ala Tyr Ala Asn Pro Glu Phe Ile Gln Ile His Pro
225   230   235   240
Thr Ala Ile Pro Gly Arg Asp Lys Leu Arg Leu Ile Ser Glu Ser Val
                245   250   255
Arg Gly Glu Gly Gly Arg Val Trp Val Pro Gly Asp Ser Ser Lys Arg
                260   265   270
Ile Val Phe Pro Asp Gly Ser Glu Arg Pro Cys Gly Glu Thr Gly Ala
                275   280   285
Pro Trp Tyr Phe Leu Glu Asp Met Tyr Pro Ala Tyr Gly Asn Leu Val
        290   295   300
Ser Arg Asp Val Gly Ala Arg Ala Ile Leu Arg Val Cys Glu Ala Gly
305   310   315   320

1007

```
Leu Gly Ile Asp Gly Arg Met Glu Ala Tyr Leu Asp Val Thr His Leu
                325                      330                 335
Pro Glu Lys Thr Arg His Lys Leu Glu Val Val Leu Asp Ile Tyr Lys
            340                 345                 350
Lys Phe Thr Gly Glu Asp Pro Asn Thr Val Pro Met Arg Ile Phe Pro
            355                 360                 365
Ala Val His Tyr Ser Met Gly Gly Ala Trp Val Asp Trp Pro Ala Ala
    370                 375                 380
Asp Asp Pro Asp Arg Asp Ser Arg Phe Arg Gln Met Thr Asn Ile Pro
385             390                 395                     400
Gly Cys Phe Asn Cys Gly Glu Ser Asp Phe Gln Tyr His Gly Ala Asn
            405                 410                 415
Arg Leu Gly Ala Asn Ser Leu Leu Ser Cys Leu Phe Ala Gly Leu Val
            420                 425                 430
Ser Gly Asp Glu Ala Ser Arg Phe Ile Glu Ala Phe Gly Ala Ser Gln
        435                 440                 445
Ala Thr Ser Ser Asp Phe Asp Arg Ala Leu Gln Gln Glu Lys Glu Glu
    450                 455                 460
Asn Ala Arg Leu Leu Ser Ala Ser Gly Lys Glu Asn Ile Phe Val Leu
465                 470                 475                 480
His Glu Glu Ile Ala Lys Ile Met Val Arg Asn Val Thr Val Lys Arg
                485                 490                 495
Asn Asn Arg Asp Leu Gln Glu Thr Met Asp Lys Leu Lys Glu Phe Arg
            500                 505                 510
Glu Arg Leu Lys Asn Val Ser Val Leu Asp Ser Ser Pro Phe Ala Asn
        515                 520                 525
Lys Ser Phe His Phe Val Arg Gln Met Gly Pro Met Leu Glu Leu Ala
    530                 535                 540
Leu Ala Ile Thr Lys Gly Ala Leu Leu Arg Asn Glu Phe Arg Gly Ser
545                 550                 555                 560
His Tyr Lys Pro Glu Phe Pro Glu Arg Asp Asp Glu His Trp Leu Lys
                565                 570                 575
Thr Thr Val Ala Val Tyr Ala Pro Glu Glu Pro Glu Ile Ser Tyr Leu
            580                 585                 590
Pro Val Asp Thr Arg His Val Ala Pro Thr Leu Arg Asp Tyr Thr Lys
        595                 600                 605
Ser Ser Thr Gly Lys Ile Glu Leu Thr Asn Ile Pro Asp Asn Ile Arg
610                 615                 620
Leu Pro Ile
625
```

    <210> 792
    <211> 275
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 792
```
Asn Ser Arg Ile Phe Leu Ile Ile Ser Val Tyr Pro Tyr Arg Lys Arg
1               5                   10                  15
Glu Met Met Glu Asn Leu Glu Thr Phe Ile Leu Lys Ile Tyr Arg Gly
            20                  25                  30
Val Pro Gly Lys Gln Tyr Trp Glu Ser Phe Glu Leu Pro Leu His Pro
        35                  40                  45
Gly Glu Asn Val Ile Ser Ala Leu Met Glu Ile Glu Lys Arg Pro Val
    50                  55                  60
Asn Ile Leu Gly Glu Lys Val Asn Pro Val Val Trp Glu Gln Gly Cys
65                  70                  75                  80
Leu Glu Glu Val Cys Gly Ser Cys Ser Ile Leu Val Asn Gly Val Pro
                85                  90                  95
Arg Gln Ala Cys Thr Ala Leu Ile Gln Glu Tyr Ile Asp Ala Thr Gln
        100                 105                 110
```

Ser Arg Glu Ile Val Leu Ala Pro Leu Thr Lys Phe Pro Leu Ile Arg
115   120   125
Asp Leu Ile Val Asp Arg Ser Ile Met Phe Asp Asn Leu Glu Arg Ile
130   135   140
Gln Gly Trp Val Ala Ala Asp Ile Glu Gly Glu Thr Phe Gly Pro Gln
145   150   155   160
Val Thr Gln Glu Gln Gln Glu Leu Leu Tyr Ala Leu Ser Gln Cys Met
                    165   170   175
Thr Cys Gly Cys Cys Thr Glu Ala Cys Pro Gln Ile Asp Asn Lys Ser
                180   185   190
Asp Phe Ile Gly Pro Ala Ala Ile Ser Gln Ala Arg Tyr Phe Asn Thr
            195   200   205
Tyr Pro Gly Asp Lys Arg Ser Lys Lys Arg Trp Arg Ala Leu Met Gly
        210   215   220
Lys Gly Gly Ile Glu Gly Cys Gly Gln Ala His Asn Cys Val Arg Val
225   230   235   240
Cys Pro Lys Lys Leu Pro Leu Thr Glu Ser Ile Ser Ala Val Gly Arg
                    245   250   255
Glu Ile Ser Lys Phe Ser Leu Arg Ser Leu Phe Ser Ala Leu Phe Lys
                260   265   270
Lys Lys Lys
        275

        <210> 793
        <211> 998
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 793
Thr Cys Leu Arg Ser Ser Arg Lys Ile Val Val Glu Asp Ile Ser Asp
1   5   10   15
Arg Asn Met Tyr Ser Cys Tyr Ser Lys Gly Ile Ser His Asn Tyr Leu
                20   25   30
Leu His Pro Met Ser Arg Leu Asp Ile Phe Val Phe Asp Ser Leu Ile
        35   40   45
Ala Asn Gln Asp Gln Asn Leu Leu Glu Glu Ile Phe Cys Ser Glu Asp
    50   55   60
Thr Val Leu Phe Lys Ala Tyr Arg Thr Thr Ala Leu Gln Ser Pro Leu
65   70   75   80
Ala Ala Lys Asn Leu Asn Ile Ala Arg Lys Val Ala Asn Tyr Ile Leu
                85   90   95
Ala Asp Asn Gly Glu Ile Asp Thr Val Lys Leu Val Glu Ala Ile His
            100   105   110
His Leu Ser Gln Cys Thr Tyr Pro Leu Gly Pro His Arg His Asn Glu
        115   120   125
Ala Gln Asp Arg Glu His Leu Leu Lys Met Leu Lys Ala Leu Lys Glu
    130   135   140
Asn Pro Lys Leu Lys Glu Ser Ile Lys Thr Leu Phe Val Pro Ser Tyr
145   150   155   160
Ser Thr Ile Gln Asn Leu Ile Arg His Thr Leu Ala Leu Asn Pro Gln
                165   170   175
Thr Ile Leu Ser Thr Ile His Val Arg Gln Ala Ala Leu Thr Ala Leu
            180   185   190
Phe Thr Tyr Leu Arg Gln Asp Val Gly Ser Cys Phe Ala Thr Ala Pro
        195   200   205
Ala Ile Leu Ile His Gln Glu Tyr Pro Glu Arg Phe Leu Lys Asp Leu
        210   215   220
Asn Asp Leu Ile Ser Ser Gly Lys Leu Ser Arg Ile Val Asn Gln Arg
225   230   235   240
Glu Ile Ala Val Pro Ile Asn Leu Ser Gly Cys Ile Gly Glu Leu Phe
                245   250   255

Lys Pro Leu Arg Ile Leu Asp Leu Tyr Pro Asp Pro Leu Val Lys Leu
        260   265   270
Ser Ser Ser Pro Gly Leu Lys Lys Ala Phe Ser Ala Ala Asn Leu Ile
    275   280   285
Glu Thr Leu Gly Asp Ser Glu Ala Gln Ile Gln Gln Leu Leu Ser His
290   295   300
Gln Tyr Leu Met Gln Lys Leu Gln Asn Val His Glu Thr Leu Thr Ala
305   310   315   320
Asn Asp Ile Ile Lys Ser Thr Leu Leu His Tyr Tyr Gln Leu Gln Glu
            325   330   335
Ser Thr Val Arg Ala Ile Phe Phe Lys Glu Gly Leu Phe Ser Lys Glu
        340   345   350
Gln Val Ala Phe Ser Thr Gln His Pro Arg Glu Leu Ser Glu Ile Gln
        355   360   365
Arg Val Tyr His Tyr Leu His Ala Tyr Glu Glu Ala Lys Ser Ala Phe
    370   375   380
Ile His Asp Thr Gln Asn Pro Leu Leu Lys Ala Trp Glu Tyr Thr Leu
385   390   395   400
Ala Thr Leu Ala Asp Ala Ser Gln Pro Thr Ile Ser Asn His Ile Arg
            405   410   415
Leu Ala Leu Gly Trp Lys Ser Glu Asp Pro His Ser Leu Val Ser Leu
            420   425   430
Val Thr His Phe Val Glu Glu Glu Val Glu Asn Ile Arg Ile Leu Val
        435   440   445
Gln Gln Cys Glu Gln Thr Tyr His Glu Ala Arg Ser Gln Leu Glu Tyr
    450   455   460
Ile Glu Gly Arg Met Arg Asn Pro Leu Asn Asn Gln Asp Ser Gln Ile
465   470   475   480
Leu Thr Met Asp His Met Arg Phe Arg Gln Glu Leu Asn Lys Ala Leu
            485   490   495
Tyr Glu Trp Asp Ser Ala Gln Glu Lys Ala Lys Lys Phe Leu His Leu
        500   505   510
Pro Glu Phe Leu Leu Ser Phe Tyr Thr Lys Gln Ile Pro Leu Tyr Phe
        515   520   525
Arg Ser Ser Tyr Asp Ala Phe Ile Gln Glu Phe Ala His Leu Tyr Ala
    530   535   540
Asn Ala Pro Ala Gly Phe Arg Ile Leu Phe Thr His Gly Arg Thr His
545   550   555   560
Pro Asn Thr Trp Ser Pro Ile Tyr Ser Ile Asn Glu Phe Ile Arg Phe
            565   570   575
Leu Ser Glu Phe Phe Thr Ser Thr Glu Ser Glu Leu Leu Gly Lys His
        580   585   590
Ala Val Ile Asn Leu Glu Lys Glu Thr Ser Arg Leu Val His Asn Ile
    595   600   605
Thr Ala Met Leu His Thr Asp Val Phe Gln Glu Ala Leu Leu Thr Arg
    610   615   620
Ile Leu Glu Ala Tyr Gln Leu Pro Val Pro Pro Ser Ile Leu Asn His
625   630   635   640
Leu Asp Gln Leu Ser Gln Thr Pro Trp Val Tyr Val Ser Gly Gly Thr
            645   650   655
Val Asp Thr Leu Leu Leu Asp Tyr Phe Glu Ser Ser Glu Pro Leu Thr
        660   665   670
Leu Thr Glu Lys His Pro Glu Asn Pro His Glu Leu Ala Ala Phe Tyr
        675   680   685
Ala Asp Ala Leu Lys Asp Leu Pro Thr Gly Ile Lys Ser Tyr Leu Glu
    690   695   700
Glu Gly Ser His Ser Leu Leu Ser Ser Ser Pro Thr His Val Phe Ser
705   710   715   720
Ile Ile Ala Gly Ser Pro Leu Phe Arg Glu Ala Trp Asp Asn Asp Trp
            725   730   735

Tyr Ser Tyr Thr Trp Leu Arg Asp Val Trp Val Lys Gln His Gln Asp
        740   745   750
Phe Leu Gln Asp Thr Ile Leu Pro Gln Leu Ser Ile Tyr Ala Phe Ile
        755   760   765
Glu Asn Phe Cys Asn Lys Tyr Ala Leu Gln His Val Val His Asp Phe
770   775   780
His Asp Phe Cys Ser Asp His Ser Leu Thr Leu Pro Glu Leu Tyr Asp
785   790   795   800
Lys Gly Ser Arg Phe Leu Ser Ser Leu Phe Thr Lys Asp Lys Thr Val
            805   810   815
Ala Leu Ile Tyr Ile Arg Arg Leu Leu Tyr Leu Met Val Arg Glu Val
        820   825   830
Pro Tyr Val Ser Glu Gln Gln Leu Pro Glu Val Leu Asp Asn Val Ser
        835   840   845
Ser Tyr Leu Gly Ile Ser Ser Arg Ile Thr Tyr Glu Lys Phe Arg Ser
    850   855   860
Leu Ile Glu Glu Thr Ile Pro Lys Met Thr Leu Leu Ser Ser Ala Asp
865   870   875   880
Leu Arg His Ile Tyr Lys Gly Leu Leu Met Gln Ser Tyr Gln Lys Ile
                885   890   895
Tyr Thr Glu Glu Asp Thr Tyr Leu Arg Leu Thr Thr Ala Met Arg His
        900   905   910
His Asn Leu Ala Tyr Pro Ala Pro Leu Leu Phe Ala Asp Ser Asn Trp
        915   920   925
Pro Ser Ile Tyr Phe Gly Phe Ile Leu Asn Pro Gly Thr Thr Glu Ile
        930   935   940
Asp Leu Trp Lys Phe Asn Tyr Ala Gly Leu Gln Gly Gln Pro Leu Asp
945   950   955   960
Asn Ile Gln Glu Leu Phe Ala Thr Ser Arg Pro Trp Thr Leu Tyr Ala
                965   970   975
Asn Pro Ile Asp Tyr Gly Met Pro Pro Pro Pro Gly Tyr Arg Ser Arg
            980   985   990
Leu Pro Lys Glu Phe Phe
            995

        <210> 794
        <211> 616
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 794
Arg His His Leu Ile Asn Ile Lys Gly Ile Arg Ile Met Lys His Thr
1   5   10   15
Phe Thr Lys Arg Val Leu Phe Phe Phe Phe Leu Val Ile Pro Ile Pro
            20   25   30
Leu Leu Leu Asn Leu Met Val Val Gly Phe Phe Ser Phe Ser Ala Ala
        35   40   45
Lys Ala Asn Leu Val Gln Val Leu His Thr Arg Ala Thr Asn Leu Ser
    50   55   60
Ile Glu Phe Glu Lys Lys Leu Thr Ile His Lys Leu Phe Leu Asp Arg
65   70   75   80
Leu Ala Asn Thr Leu Ala Leu Lys Ser Tyr Ala Ser Pro Ser Ala Glu
                85   90   95
Pro Tyr Ala Gln Ala Tyr Asn Glu Met Met Ala Leu Ser Asn Thr Asp
            100   105   110
Phe Ser Leu Cys Leu Ile Asp Pro Phe Asp Gly Ser Val Arg Thr Lys
        115   120   125
Asn Pro Gly Asp Pro Phe Ile Arg Tyr Leu Lys Gln His Pro Glu Met
    130   135   140
Lys Lys Lys Leu Ser Ala Ala Val Gly Lys Ala Phe Leu Leu Thr Ile
145   150   155   160

                                1011

Pro Gly Lys Pro Leu Leu His Tyr Leu Ile Leu Val Glu Asp Val Ala
          165   170   175

Ser Trp Asp Ser Thr Thr Thr Ser Gly Leu Leu Val Ser Phe Tyr Pro
         180   185   190

Met Ser Phe Leu Gln Lys Asp Leu Phe Gln Ser Leu His Ile Thr Lys
         195   200   205

Gly Asn Ile Cys Leu Val Asn Lys Tyr Gly Glu Val Leu Phe Cys Ala
210   215   220

Gln Asp Ser Glu Ser Ser Phe Val Phe Ser Leu Asp Leu Pro Asn Leu
225   230   235   240

Pro Gln Phe Gln Ala Arg Ser Pro Ser Ala Ile Glu Ile Glu Lys Ala
         245   250   255

Ser Gly Ile Leu Gly Gly Glu Asn Leu Ile Thr Val Ser Ile Asn Lys
         260   265   270

Lys Arg Tyr Leu Gly Leu Val Leu Asn Lys Ile Pro Ile Gln Gly Thr
         275   280   285

Tyr Thr Leu Ser Leu Val Pro Val Ser Asp Leu Ile Gln Ser Ala Leu
        290   295   300

Lys Val Pro Leu Asn Ile Cys Phe Phe Tyr Val Leu Ala Phe Leu Leu
305   310   315   320

Met Trp Trp Ile Phe Ser Lys Ile Asn Thr Lys Leu Asn Lys Pro Leu
         325   330   335

Gln Glu Leu Thr Phe Cys Met Glu Ala Ala Trp Arg Gly Asn His Asn
         340   345   350

Val Arg Phe Glu Pro Gln Pro Tyr Gly Tyr Glu Phe Asn Glu Leu Gly
        355   360   365

Asn Ile Phe Asn Cys Thr Leu Leu Leu Leu Leu Asn Ser Ile Glu Lys
        370   375   380

Ala Asp Ile Asp Tyr His Ser Gly Glu Lys Leu Gln Lys Glu Leu Gly
385   390   395   400

Ile Leu Ser Ser Leu Gln Ser Ala Leu Leu Ser Pro Asp Phe Pro Thr
        405   410   415

Phe Pro Lys Val Thr Phe Ser Ser Gln His Leu Arg Arg Arg Gln Leu
        420   425   430

Ser Gly His Phe Asn Gly Trp Thr Val Gln Asp Gly Gly Asp Thr Leu
        435   440   445

Leu Gly Ile Ile Gly Leu Ala Gly Asp Ile Gly Leu Pro Ser Tyr Leu
        450   455   460

Tyr Ala Leu Ser Ala Arg Ser Leu Phe Leu Ala Tyr Ala Ser Ser Asp
465   470   475   480

Val Ser Leu Gln Lys Ile Ser Lys Asp Thr Ala Asp Ser Phe Ser Lys
        485   490   495

Thr Thr Glu Gly Asn Glu Ala Val Val Ala Met Thr Phe Ile Lys Tyr
        500   505   510

Val Glu Lys Asp Arg Ser Leu Glu Leu Leu Ser Leu Ser Glu Gly Ala
        515   520   525

Pro Thr Met Phe Leu Gln Arg Gly Glu Ser Phe Val Arg Leu Pro Leu
        530   535   540

Glu Thr His Gln Ala Leu Gln Pro Gly Asp Arg Leu Ile Cys Leu Thr
545   550   555   560

Gly Gly Glu Asp Ile Leu Lys Tyr Phe Ser Gln Leu Pro Ile Glu Glu
          565   570   575

Leu Leu Lys Asp Pro Leu Asn Pro Leu Asn Thr Glu Asn Leu Ile Asp
        580   585   590

Ser Leu Thr Met Met Leu Asn Asn Glu Thr Glu His Ser Ala Asp Gly
        595   600   605

Thr Leu Thr Ile Leu Ser Phe Ser
        610   615

<210> 795
<211> 640
<212> PRT
<213> Chlamydia pneumoniae

<400> 795

```
Ser Ala Val Ile Pro Met Ile Pro Phe Thr Lys Thr Ile Gly Phe Arg
1               5                   10                  15
Leu Trp Leu Ala Cys Ala Val Ala Ile Ile Ala Pro Leu Gly Ile Asn
        20                  25                  30
Ile Val Trp Leu Asn Leu Asp Gln Tyr Arg Thr Ile Val Ser Ala Ile
        35                  40                  45
Ser Thr Ala Leu Lys Glu Asn Ala Ala Phe Lys Ala Asn Thr Leu Thr
    50                  55                  60
Gln Ile Val Pro Leu Asn Val Asp Val Leu Ser Leu Phe Ser Asp Val
65                  70                  75                  80
Leu Asp Leu Asp Ala Gly Ile Pro Glu Thr Pro Asn Val Leu Leu Ser
            85                  90                  95
Asn Glu Met Gln Lys Val Phe Gln Gly Ile Tyr Asn Glu Ile Ser Leu
            100                 105                 110
Ile Lys Val Phe Pro Asn Gly Asp Lys Ile Val Val Ala Ser Ser Ile
            115                 120                 125
Pro Glu His Leu Gly Glu Asn Tyr Asn His Lys Ile Asp Ile Pro Lys
    130                 135                 140
Asn Thr Pro Phe Leu Ala Ala Leu Lys Gln Ser Pro Lys Asn Gln Glu
145                 150                 155                 160
Val Phe Ser Val Met Gln Ala Asn Val Phe Asp Ala Lys Thr Gln Glu
                165                 170                 175
Leu Gln Gly Ile Leu Tyr Thr Thr Phe Ser Ala Glu Ser Leu Leu Lys
            180                 185                 190
Asp Leu Leu Ile Asn Lys Gln Ser Tyr Leu Thr Val Lys Thr Ala Ile
            195                 200                 205
Leu Ser Lys Tyr Gly Val Ile Leu Lys Ala Ser Asp Pro Ala Leu His
    210                 215                 220
Leu His Thr Val Tyr Pro Asp Met Thr Lys Glu Lys Phe Cys Gln Val
225                 230                 235                 240
Phe Leu Asn Asp Asp Pro Cys Pro Ile Asp Ser Glu Leu Gly Pro Leu
                245                 250                 255
Thr Leu Ser Pro Leu Asp Ile Gly Glu Asn Phe Tyr Ser Phe Lys Ile
            260                 265                 270
Lys Asp Thr Glu Ile Trp Gly Cys Ile Glu Asn Val Pro Ser Ile Asp
        275                 280                 285
Ile Ala Val Leu Ser Tyr Ala Lys Lys Glu Glu Ser Phe Ala Pro Leu
    290                 295                 300
Trp Arg Arg Ala Arg Met Tyr Thr Ala Tyr Phe Phe Cys Ile Leu Leu
305                 310                 315                 320
Gly Ser Leu Ile Ala Phe Ile Val Ala Arg Arg Leu Ser Leu Pro Ile
                325                 330                 335
Arg Lys Leu Ala Thr Ala Met Ile Glu Ser Arg Lys Asn Lys Asn Cys
            340                 345                 350
Leu Tyr Thr Asp Asp Ser Leu Gly Phe Glu Ile Asn Arg Leu Gly His
            355                 360                 365
Ile Phe Asn Ala Met Val Glu Asn Leu His Lys Gln Gln His Leu Ala
    370                 375                 380
Lys Thr Asn Phe Glu Met Lys Glu Asn Ala Gln Asn Ala Leu His Leu
385                 390                 395                 400
Gly Glu Gln Ala Gln Gln Arg Leu Leu Pro Asn Thr Leu Pro Ser Tyr
                405                 410                 415
Pro His Ile Glu Leu Ala Lys Ala Tyr Ile Pro Ala Ile Thr Val Gly
            420                 425                 430
```

1013

```
Gly Asp Phe Phe Asp Val Phe Val Val Gly Glu Gly Ser Lys Ala Arg
        435             440             445
Leu Phe Leu Ile Val Ala Asp Ala Ser Gly Lys Gly Val Asn Ala Cys
    450             455             460
Gly Tyr Ser Leu Phe Leu Lys Asn Met Leu Arg Thr Phe Leu Ser Arg
465             470             475             480
Ser Ser Ser Leu Gln Gln Ala Ile Gln Glu Thr Ser Arg Leu Phe Tyr
            485             490             495
Asn Asn Thr Lys Asn Ser Gly Met Phe Val Thr Leu Cys Val Tyr Cys
        500             505             510
Tyr His Gln Thr Ser Asn Thr Met Glu Tyr Tyr Ser Cys Gly His Pro
    515             520             525
Pro Ala Cys Tyr Leu Asp Pro Asp Gly Glu Thr Ser Trp Leu Phe His
    530             535             540
Pro Gly Met Ala Leu Gly Phe Leu Pro Glu Val Ala Asn Ile Thr Ser
545             550             555             560
Lys Leu Phe His Pro Lys Pro Gly Ser Leu Phe Val Leu Tyr Ser Asp
            565             570             575
Gly Ile Thr Glu Ala His Asn Asn Asn Asn Asp Met Phe Gly Glu Glu
        580             585             590
Arg Leu Gln Ala Ala Ile Gln Gly Leu Thr Gly Lys Ser Ala Ala Asp
    595             600             605
Ala Val His Arg Leu Met Leu Ser Val Lys Thr Phe Val Gly Asn Ser
    610             615             620
His Gln His Asp Asp Ile Thr Leu Leu Ile Leu Lys Val Leu Glu Ser
625             630             635             640
```

```
<210> 796
<211> 294
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 796
Lys Ser Ser Lys His Arg Ser Phe Leu Leu Lys Lys Ser Gly Gly Asn
1               5               10              15
Gln Val Ser Leu Tyr Gln Lys Trp Trp Asn Ser Gln Leu Lys Lys Ser
        20              25              30
Leu Cys Tyr Ser Thr Val Ala Ala Leu Ile Phe Met Ile Pro Ser Gln
    35              40              45
Glu Ser Phe Ala Asp Ser Leu Ile Asp Leu Asn Leu Gly Leu Asp Pro
    50              55              60
Ser Val Glu Cys Leu Ser Gly Asp Gly Ala Phe Ser Val Gly Tyr Phe
65              70              75              80
Thr Lys Ala Gly Ser Thr Pro Val Glu Tyr Gln Pro Phe Lys Tyr Asp
            85              90              95
Val Ser Lys Lys Thr Phe Thr Ile Leu Ser Val Glu Thr Ala Asn Gln
        100             105             110
Ser Gly Tyr Ala Tyr Gly Ile Ser Tyr Asp Gly Thr Ile Thr Val Gly
    115             120             125
Thr Cys Ser Leu Gly Ala Gly Lys Tyr Asn Gly Ala Lys Trp Ser Ala
    130             135             140
Asp Gly Thr Leu Thr Pro Leu Thr Gly Ile Thr Gly Gly Thr Ser His
145             150             155             160
Thr Glu Ala Arg Ala Ile Ser Lys Asp Thr Gln Val Ile Glu Gly Phe
            165             170             175
Ser Tyr Asp Ala Ser Gly Gln Pro Lys Ala Val Gln Trp Ala Ser Gly
        180             185             190
Ala Thr Thr Val Thr Gln Leu Ala Asp Ile Ser Gly Gly Ser Arg Ser
    195             200             205
Ser Tyr Ala Tyr Ala Ile Ser Asp Asp Gly Thr Ile Ile Val Gly Ser
    210             215             220
```

Met Glu Ser Thr Ile Thr Arg Lys Thr Thr Ala Val Lys Trp Val Asn
225   230   235   240
Asn Val Pro Thr Tyr Leu Gly Thr Leu Gly Gly Asp Ala Ser Thr Gly
            245   250   255
Leu Tyr Ile Ser Gly Asp Gly Thr Val Ile Val Gly Ala Ala Asn Thr
            260   265   270
Ala Thr Val Thr Asn Gly Asn Gln Glu Ser His Ala Tyr Met Tyr Lys
            275   280   285
Asp Asn Gln Met Lys Asp
        290

<210> 797
<211> 396
<212> PRT
<213> Chlamydia pneumoniae

<400> 797
Gly Thr Leu Gly Gly Ala Asn Ser Ser Ala Thr Gly Val Ser Ser Asp
1   5   10   15
Gly Ser Val Ile Val Gly Gln Ala Gln Thr Ala Asp Lys Ser Val His
            20   25   30
Ala Phe Gln Tyr Tyr Asn Gly Glu Met Lys Asp Leu Gly Thr Leu Gly
        35   40   45
Gly Thr Ser Ser Thr Ala Lys Thr Val Ser Pro Asp Gly Lys Val Ile
        50   55   60
Met Gly Arg Ser Gln Ile Ala Asp Gly Ser Trp His Ala Phe Met Cys
65   70   75   80
His Thr Asp Phe Ser Ser Asn Asn Val Leu Phe Asp Leu Asp Asn Thr
                85   90   95
Tyr Lys Thr Leu Arg Glu Asn Gly Arg Gln Leu Asn Ser Ile Phe Asn
            100   105   110
Leu Gln Asn Met Met Leu Gln Arg Ala Ser Asp His Glu Phe Thr Glu
        115   120   125
Phe Gly Arg Ser Asn Ile Ala Leu Gly Ala Gly Leu Tyr Val Asn Ala
    130   135   140
Leu Gln Asn Leu Pro Ser Asn Leu Ala Ala Gln Tyr Phe Gly Ile Ala
145   150   155   160
Tyr Lys Ile Arg Pro Lys Tyr Arg Leu Gly Val Phe Leu Asp His Asn
                165   170   175
Phe Ser Ser His Val Pro Asn Asn Phe Asn Val Ser His Asn Arg Leu
            180   185   190
Trp Met Gly Ala Phe Ile Gly Trp Gln Asp Ser Asp Ala Leu Gly Ser
        195   200   205
Ser Val Lys Val Ser Phe Gly Tyr Gly Lys Gln Lys Ala Thr Ile Thr
    210   215   220
Arg Glu Gln Leu Glu Asn Thr Glu Ala Gly Ser Gly Glu Ser His Phe
225   230   235   240
Glu Gly Val Ala Ala Gln Ile Glu Gly Arg Tyr Gly Lys Ser Leu Gly
                245   250   255
Gly His Val Arg Val Gln Pro Phe Leu Gly Leu Gln Phe Val His Ile
        260   265   270
Thr Arg Lys Glu Tyr Thr Glu Asn Ala Val Gln Phe Pro Val His Tyr
        275   280   285
Asp Pro Ile Asp Tyr Ser Thr Gly Val Val Tyr Leu Gly Ile Gly Ser
        290   295   300
His Ile Ala Leu Val Asp Ser Leu His Val Gly Thr Arg Met Gly Met
305   310   315   320
Glu Gln Asn Phe Ala Ala His Thr Asp Arg Phe Ser Gly Ser Ile Ala
                325   330   335
Ser Ile Gly Asn Phe Val Phe Glu Lys Leu Asp Val Thr His Thr Arg
            340   345   350

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```
Ala Phe Ala Glu Met Arg Val Asn Tyr Glu Leu Pro Tyr Leu Gln Ser
        355                     360                 365
Leu Asn Leu Ile Leu Arg Val Asn Gln Gln Pro Leu Gln Gly Val Met
        370                 375                 380
Gly Phe Ser Ser Asp Leu Arg Tyr Ala Leu Gly Phe
385                 390                 395
```

```
<210> 798
<211> 687
<212> PRT
<213> Chlamydia pneumoniae

<400> 798
Ser Glu Leu Tyr Ser Ser Tyr Leu Gln Pro Cys Leu Asn Met Ser Ile
1               5                   10                  15
Val Arg Asn Ser Ala Leu Pro Leu Pro Cys Leu Ser Arg Ser Glu Thr
            20                  25                  30
Phe Lys Lys Val Arg Ser His Met Lys Phe Met Lys Val Leu Thr Pro
        35                  40                  45
Trp Ile Tyr Arg Lys Asp Leu Trp Val Thr Ala Phe Leu Leu Thr Ala
        50                  55                  60
Ile Pro Gly Ser Phe Ala His Thr Leu Val Asp Ile Ala Gly Glu Pro
65                  70                  75                  80
Arg His Ala Ala Gln Ala Thr Gly Val Ser Gly Asp Gly Lys Ile Val
                85                  90                  95
Ile Gly Met Lys Val Pro Asp Asp Pro Phe Ala Ile Thr Val Gly Phe
            100                 105                 110
Gln Tyr Ile Asp Gly His Leu Gln Pro Leu Glu Ala Val Arg Pro Gln
        115                 120                 125
Cys Ser Val Tyr Pro Asn Gly Ile Thr Pro Asp Gly Thr Val Ile Val
        130                 135                 140
Gly Thr Asn Tyr Ala Ile Gly Met Gly Ser Val Ala Val Lys Trp Val
145                 150                 155                 160
Asn Gly Lys Val Ser Glu Leu Pro Met Leu Pro Asp Thr Leu Asp Ser
                165                 170                 175
Val Ala Ser Ala Val Ser Ala Asp Gly Arg Val Ile Gly Gly Asn Arg
            180                 185                 190
Asn Ile Asn Leu Gly Ala Ser Val Ala Val Lys Trp Glu Asp Asp Val
        195                 200                 205
Ile Thr Gln Leu Pro Ser Leu Pro Asp Ala Met Asn Ala Cys Val Asn
        210                 215                 220
Gly Ile Ser Ser Asp Gly Ser Ile Ile Val Gly Thr Met Val Asp Val
225                 230                 235                 240
Ser Trp Arg Asn Thr Ala Val Gln Trp Ile Gly Asp Gln Leu Ser Val
                245                 250                 255
Ile Gly Thr Leu Gly Gly Thr Thr Ser Val Ala Ser Ala Ile Ser Thr
            260                 265                 270
Asp Gly Thr Val Ile Val Gly Gly Ser Glu Asn Ala Asp Ser Gln Thr
        275                 280                 285
His Ala Tyr Ala Tyr Lys Asn Gly Val Met Ser Asp Ile Gly Thr Leu
        290                 295                 300
Gly Gly Phe Tyr Ser Leu Ala His Ala Val Ser Ser Asp Gly Ser Val
305                 310                 315                 320
Ile Val Gly Val Ser Thr Asn Ser Glu His Arg Tyr His Ala Phe Gln
                325                 330                 335
Tyr Ala Asp Gly Gln Met Val Asp Leu Gly Thr Leu Gly Gly Pro Glu
            340                 345                 350
Ser Tyr Ala Gln Gly Val Ser Gly Asp Gly Lys Val Ile Val Gly Arg
        355                 360                 365
Ala Gln Val Pro Ser Gly Asp Trp His Ala Phe Leu Cys Pro Phe Gln
        370                 375                 380
```

1016

Ala Pro Ser Pro Ala Pro Val His Gly Gly Ser Thr Val Val Thr Ser
385   390   395   400
Gln Asn Pro Arg Gly Met Val Asp Ile Asn Ala Thr Tyr Ser Ser Leu
                405   410   415
Lys Asn Ser Gln Gln Gln Leu Gln Arg Leu Leu Ile Gln His Ser Ala
            420   425   430
Lys Val Glu Ser Val Ser Ser Gly Ala Pro Ser Phe Thr Ser Val Lys
        435   440   445
Gly Ala Ile Ser Lys Gln Ser Pro Ala Val Gln Asn Asp Val Gln Lys
    450   455   460
Gly Thr Phe Leu Ser Tyr Arg Ser Gln Val His Gly Asn Val Gln Asn
465   470   475   480
Gln Gln Leu Leu Thr Gly Ala Phe Met Asp Trp Lys Leu Ala Ser Ala
                485   490   495
Pro Lys Cys Gly Phe Lys Val Ala Leu His Tyr Gly Ser Gln Asp Ala
            500   505   510
Leu Val Glu Arg Ala Ala Leu Pro Tyr Thr Glu Gln Gly Leu Gly Ser
        515   520   525
Ser Val Leu Ser Gly Phe Gly Gly Gln Val Gln Gly Arg Tyr Asp Phe
        530   535   540
Asn Leu Gly Glu Thr Val Val Leu Gln Pro Phe Met Gly Ile Gln Val
545   550   555   560
Leu His Leu Ser Arg Glu Gly Tyr Ser Glu Lys Asn Val Arg Phe Pro
                565   570   575
Val Ser Tyr Asp Ser Val Ala Tyr Ser Ala Ala Thr Ser Phe Met Gly
            580   585   590
Ala His Val Phe Ala Ser Leu Ser Pro Lys Met Ser Thr Ala Ala Thr
            595   600   605
Leu Gly Val Glu Arg Asp Leu Asn Ser His Ile Asp Glu Phe Lys Gly
    610   615   620
Ser Val Ser Ala Met Gly Asn Phe Val Leu Glu Asn Ser Thr Val Ser
625   630   635   640
Val Leu Arg Pro Phe Ala Ser Leu Ala Met Tyr Tyr Asp Val Arg Gln
                645   650   655
Gln Gln Leu Val Thr Leu Ser Val Val Met Asn Gln Gln Pro Leu Thr
            660   665   670
Gly Thr Leu Ser Leu Val Ser Gln Ser Ser Tyr Asn Leu Ser Phe
            675   680   685

        <210> 799
        <211> 381
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 799
Val Leu Ile Leu Thr Trp Ile Asn Val Leu Thr Lys Leu Gly Leu Asn
1   5   10   15
Met Ser Lys Lys Ile Lys Val Leu Gly His Leu Thr Leu Cys Thr Leu
            20   25   30
Phe Arg Gly Val Leu Cys Ala Ala Ala Leu Ser Asn Ile Gly Tyr Ala
        35   40   45
Ser Thr Ser Gln Glu Ser Pro Tyr Gln Lys Ser Ile Glu Asp Trp Lys
    50   55   60
Gly Tyr Thr Phe Thr Asp Leu Glu Leu Leu Ser Lys Glu Gly Trp Ser
65   70   75   80
Glu Ala His Ala Val Ser Gly Asn Gly Ser Arg Ile Val Gly Ala Ser
                85   90   95
Gly Ala Gly Gln Gly Ser Val Thr Ala Val Ile Trp Glu Ser His Leu
            100   105   110
Ile Lys His Leu Gly Thr Leu Gly Gly Glu Ala Ser Ser Ala Glu Gly
    115   120   125

                        1017

Ile Ser Lys Asp Gly Glu Val Val Val Gly Trp Ser Asp Thr Arg Glu
    130   135   140
Gly Tyr Thr His Ala Phe Val Phe Asp Gly Arg Asp Met Lys Asp Leu
145   150   155   160
Gly Thr Leu Gly Ala Thr Tyr Ser Val Ala Arg Gly Val Ser Gly Asp
            165   170   175
Gly Ser Ile Ile Val Gly Val Ser Ala Thr Ala Arg Gly Glu Asp Tyr
            180   185   190
Gly Trp Gln Val Gly Val Lys Trp Glu Lys Gly Lys Ile Lys Gln Leu
        195   200   205
Lys Leu Leu Pro Gln Gly Leu Trp Ser Glu Ala Asn Ala Ile Ser Glu
210   215   220
Asp Gly Thr Val Ile Val Gly Arg Gly Glu Ile Ser Arg Asn His Ile
225   230   235   240
Val Ala Val Lys Trp Asn Lys Asn Ala Val Tyr Ser Leu Gly Thr Leu
            245   250   255
Gly Gly Ser Val Ala Ser Ala Glu Ala Ile Ser Ala Asn Gly Lys Val
            260   265   270
Ile Val Gly Trp Ser Thr Thr Asn Asn Gly Glu Thr His Ala Phe Met
            275   280   285
His Lys Asp Glu Thr Met His Asp Leu Gly Thr Leu Gly Gly Gly Phe
        290   295   300
Ser Val Ala Thr Gly Val Ser Ala Asp Gly Arg Ala Ile Val Gly Phe
305   310   315   320
Ser Ala Val Lys Thr Gly Glu Ile His Ala Phe Tyr Tyr Ala Glu Gly
            325   330   335
Glu Met Glu Asp Leu Thr Thr Leu Gly Gly Glu Glu Ala Arg Val Phe
            340   345   350
Asp Ile Ser Ser Glu Gly Asn Asp Ile Ile Gly Ser Ile Lys Thr Asp
        355   360   365
Ala Gly Ala Glu Arg Ala Tyr Leu Phe His Ile His Lys
370   375   380

    <210> 800
    <211> 349
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 800
Val Val Phe Glu Ile Ile Phe Val Val Arg Val Pro Met Lys Lys Thr
1   5   10   15
Cys Cys Gln Asn Tyr Arg Ser Ile Gly Val Val Phe Ser Val Val Leu
            20   25   30
Phe Val Leu Thr Thr Gln Thr Leu Phe Ala Gly His Phe Ile Asp Ile
        35   40   45
Gly Thr Ser Gly Leu Tyr Ser Trp Ala Arg Gly Val Ser Gly Asp Gly
    50   55   60
Arg Val Val Val Gly Tyr Glu Gly Gly Asn Ala Phe Lys Tyr Val Asp
65   70   75   80
Gly Glu Lys Phe Leu Leu Glu Gly Leu Val Pro Arg Ser Glu Ala Leu
            85   90   95
Val Phe Lys Ala Ser Tyr Asp Gly Ser Val Ile Ile Gly Ile Ser Asp
            100   105   110
Gln Asp Pro Ser Cys Arg Ala Val Lys Trp Val Asn Gly Ala Leu Val
        115   120   125
Asp Leu Gly Ile Phe Ser Glu Gly Met Gln Ser Phe Ala Glu Gly Val
        130   135   140
Ser Ser Asp Gly Lys Thr Ile Val Gly Cys Leu Tyr Ser Asp Asp Thr
145   150   155   160
Glu Thr Asn Phe Ala Val Lys Trp Asp Glu Thr Gly Met Val Val Leu
            165   170   175

Pro Asn Leu Pro Glu Asp Arg His Ser Cys Ala Trp Asp Ala Ser Glu
180 185 190
Asp Gly Ser Val Ile Val Gly Asp Ala Met Gly Ser Glu Glu Ile Ala
195 200 205
Lys Ala Val Tyr Trp Lys Asp Gly Glu Gln His Leu Leu Ser Asn Ile
210 215 220
Pro Gly Ala Lys Arg Ser Ser Ala His Ala Val Ser Lys Asp Gly Ser
225 230 235 240
Phe Ile Val Gly Glu Phe Ile Ser Glu Glu Asn Glu Val His Ala Phe
245 250 255
Val Tyr His Asn Gly Val Ile Lys Asp Ile Gly Thr Leu Gly Gly Asp
260 265 270
Tyr Ser Val Ala Thr Gly Val Ser Arg Asp Gly Lys Val Ile Val Gly
275 280 285
His Ser Thr Arg Thr Asp Gly Glu Tyr Arg Ala Phe Lys Tyr Val Asp
290 295 300
Gly Arg Met Ile Asp Leu Gly Thr Leu Gly Gly Ser Ala Ser Phe Ala
305 310 315 320
Phe Gly Val Ser Asp Asp Gly Lys Thr Ile Val Gly Lys Phe Glu Thr
325 330 335
Glu Leu Gly Glu Cys His Ala Phe Ile Tyr Leu Asp Asp
340 345

<400> 801
Lys Arg Glu Glu Asn Met Ala Ala Ile Lys Gln Ile Leu Arg Ser Met
1 5 10 15
Leu Ser Gln Ser Ser Leu Trp Met Val Leu Phe Ser Leu Tyr Ser Leu
20 25 30
Ser Gly Tyr Cys Tyr Val Ile Thr Asp Lys Pro Glu Asp Asp Phe His
35 40 45
Ser Ser Ser Ala Val Lys Trp Asp His Trp Gly Lys Thr Thr Leu Ser
50 55 60
Arg Leu Ser Asn Lys Lys Ala Ser Ala Lys Ala Val Ser Gly Thr Gly
65 70 75 80
Ala Thr Thr Val Gly Phe Ile Lys Asp Thr Trp Ser Arg Thr Tyr Ala
85 90 95
Val Arg Trp Asn Tyr Trp Gly Thr Lys Glu Leu Pro Thr Ser Ser Trp
100 105 110
Val Lys Lys Ser Lys Ala Thr Gly Ile Ser Ser Asp Gly Ser Ile Ile
115 120 125
Ala Gly Ile Val Glu Asn Glu Leu Ser Gln Ser Phe Ala Val Thr Trp
130 135 140
Lys Asn Asn Glu Met Tyr Leu Leu Pro Ser Thr Trp Ala Val Gln Ser
145 150 155 160
Lys Ala Tyr Gly Ile Ser Ser Asp Gly Ser Val Ile Val Gly Ser Ala
165 170 175
Lys Asp Ala Trp Ser Arg Thr Phe Ala Val Lys Trp Thr Gly His Glu
180 185 190
Ala Gln Val Leu Pro Val Gly Trp Ala Val Lys Ser Val Ala Asn Ser
195 200 205
Val Ser Ala Asn Gly Ser Ile Ile Val Gly Ser Val Gln Asp Ala Ser
210 215 220
Gly Ile Leu Tyr Ala Val Lys Trp Glu Gly Asn Thr Ile Thr His Leu
225 230 235 240
Gly Thr Leu Gly Gly Tyr Ser Ala Ile Ala Lys Ala Val Ser Asn Asn
245 250 255

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Gly Lys Val Ile Val Gly Arg Ser Glu Thr Tyr Tyr Gly Glu Val His
         260                     265                 270
Ala Phe Cys His Lys Asn Gly Val Met Ser Asp Leu Gly Thr Leu Gly
         275                 280                 285
Gly Ser Tyr Ser Ala Ala Lys Gly Val Ser Ala Thr Gly Lys Val Ile
         290                 295                 300
Val Gly Met Ser Thr Thr Ala Asn Gly Lys Leu His Ala Phe Lys Tyr
305                 310                 315                 320
Val Gly Gly Arg Met Ile Asp Leu Gly Glu Tyr Ser Trp Lys Glu Ala
             325                 330                 335
Cys Ala Asn Ala Val Ser Ile Asp Gly Glu Ile Ile Val Gly Val Gln
         340                 345                 350

Ser Glu
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```
<400> 802
Arg Lys Glu Ile Lys Ile Met Phe Glu Ala Val Ile Ala Asp Ile Gln
1             5                 10                  15
Ala Arg Glu Ile Leu Asp Ser Arg Gly Tyr Pro Thr Leu His Val Lys
             20                 25                  30
Val Thr Thr Ser Thr Gly Ser Val Gly Glu Ala Arg Val Pro Ser Gly
         35                 40                  45
Ala Ser Thr Gly Lys Lys Glu Ala Leu Glu Phe Arg Asp Thr Asp Ser
         50                 55                  60
Pro Arg Tyr Gln Gly Lys Gly Val Leu Gln Ala Val Lys Asn Val Lys
65                 70                 75                  80
Glu Ile Leu Phe Pro Leu Val Lys Gly Cys Ser Val Tyr Glu Gln Ser
             85                 90                  95
Leu Ile Asp Ser Leu Met Met Asp Ser Asp Gly Ser Pro Asn Lys Glu
         100                 105                 110
Thr Leu Gly Ala Asn Ala Ile Leu Gly Val Ser Leu Ala Thr Ala His
         115                 120                 125
Ala Ala Ala Ala Thr Leu Arg Arg Pro Leu Tyr Arg Tyr Leu Gly Gly
         130                 135                 140
Cys Phe Ala Cys Ser Leu Pro Cys Pro Met Met Asn Leu Ile Asn Gly
145                 150                 155                 160
Gly Met His Ala Asp Asn Gly Leu Glu Phe Gln Glu Phe Met Ile Arg
             165                 170                 175
Pro Ile Gly Ala Ser Ser Ile Lys Glu Ala Val Asn Met Gly Ala Asp
         180                 185                 190
Val Phe His Thr Leu Lys Lys Leu Leu His Glu Arg Gly Leu Ser Thr
         195                 200                 205
Gly Val Gly Asp Glu Gly Gly Phe Ala Pro Asn Leu Ala Ser Asn Glu
         210                 215                 220
Glu Ala Leu Glu Leu Leu Leu Leu Ala Ile Glu Lys Ala Gly Phe Thr
225                 230                 235                 240
Pro Gly Lys Asp Ile Ser Leu Ala Leu Asp Cys Ala Ala Ser Ser Phe
             245                 250                 255
Tyr Asn Val Lys Thr Gly Thr Tyr Asp Gly Arg His Tyr Glu Glu Gln
             260                 265                 270
Ile Ala Ile Leu Ser Asn Leu Cys Asp Arg Tyr Pro Ile Asp Ser Ile
         275                 280                 285
Glu Asp Gly Leu Ala Glu Glu Asp Tyr Asp Gly Trp Ala Leu Leu Thr
         290                 295                 300
Glu Val Leu Gly Glu Lys Val Gln Ile Val Gly Asp Asp Leu Phe Val
305                 310                 315                 320
```

1020

Thr Asn Pro Glu Leu Ile Leu Glu Gly Ile Ser Asn Gly Leu Ala Asn
            325   330   335
Ser Val Leu Ile Lys Pro Asn Gln Ile Gly Thr Leu Thr Glu Thr Val
            340   345   350
Tyr Ala Ile Lys Leu Ala Gln Met Ala Gly Tyr Thr Thr Ile Ile Ser
            355   360   365
His Arg Ser Gly Glu Thr Thr Asp Thr Thr Ile Ala Asp Leu Ala Val
            370   375   380
Ala Phe Asn Ala Gly Gln Ile Lys Thr Gly Ser Leu Ser Arg Ser Glu
385   390   395   400
Arg Val Ala Lys Tyr Asn Arg Leu Met Glu Ile Glu Glu Glu Leu Gly
                405   410   415
Ser Glu Ala Ile Phe Thr Asp Ser Asn Val Phe Ser Tyr Glu Asp Ser
                420   425   430
Glu Glu

<400> 803
Ile Ile Phe Thr Met Thr Phe Gln Leu His Ala Pro Phe Ala Pro Cys
1   5   10   15
Gly Asp Gln Pro Glu Ala Ile Ala Arg Leu Ser Ala Gly Val Arg Asn
            20   25   30
Gln Val Lys Ser Gln Val Leu Leu Gly Thr Thr Gly Ser Gly Lys Thr
            35   40   45
Phe Thr Ile Ala Asn Val Val Ala Asn Val Asn Leu Pro Thr Leu Val
            50   55   60
Leu Ala His Asn Lys Thr Leu Ala Ala Gln Leu Tyr Gln Glu Phe Arg
65   70   75   80
Glu Phe Phe Pro Asn Asn Ala Val Glu Tyr Phe Ile Ser Tyr Tyr Asp
                85   90   95
Tyr Tyr Gln Pro Glu Ala Tyr Ile Ala Arg Ser Asp Thr Tyr Ile Glu
            100   105   110
Lys Ser Leu Leu Ile Asn Asp Glu Ile Asp Lys Leu Arg Leu Ser Ala
            115   120   125
Thr Arg Ser Ile Leu Glu Arg Arg Asp Thr Leu Ile Val Ser Ser Val
            130   135   140
Ser Cys Ile Tyr Gly Ile Gly Ser Pro Glu Asn Tyr Thr Ser Met Ala
145   150   155   160
Leu Val Leu Glu Val Gly Lys Glu Tyr Pro Arg Asn Ile Leu Thr Ala
                165   170   175
Gln Leu Val Lys Met His Tyr Gln Ala Ser Pro Ile Pro Gln Arg Ser
            180   185   190
Ala Phe Arg Glu Arg Gly Ser Val Ile Asp Ile Phe Pro Ala Tyr Glu
            195   200   205
Ser Glu Leu Ala Leu Arg Leu Glu Phe Leu Asn Asp Thr Leu Thr Ser
            210   215   220
Ile Glu Tyr Ser Asp Pro Leu Thr Met Ile Pro Lys Glu Ser Val Pro
225   230   235   240
Ser Ala Thr Leu Tyr Pro Gly Ser His Tyr Val Ile Pro Glu Ala Ile
                245   250   255
Arg Glu Gln Ala Ile Arg Thr Ile Gln Glu Glu Leu Glu Glu Arg Met
            260   265   270
Ala Phe Phe Asp Asp Arg Pro Ile Glu Lys Asp Arg Ile Phe His Arg
            275   280   285
Thr Thr His Asp Ile Glu Met Ile Lys Glu Ile Gly Phe Cys Lys Gly
290   295   300

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Ile Glu Asn Tyr Ser Arg His Phe Thr Gly Ala Pro Pro Gly Ala Pro
305                 310                 315                 320
Pro Thr Cys Leu Leu Asp Tyr Phe Pro Glu Asp Phe Leu Leu Ile Ile
            325                 330                 335
Asp Glu Ser His Gln Thr Leu Pro Gln Ile Arg Ala Met Tyr Arg Gly
        340                 345                 350
Asp Gln Ser Arg Lys Gln Ser Leu Val Glu Tyr Gly Phe Arg Leu Pro
        355                 360                 365
Ser Ala Phe Asp Asn Arg Pro Leu Thr Tyr Glu Glu Ala Gln Lys Tyr
        370                 375                 380
Phe Arg Lys Val Ile Tyr Val Ser Ala Thr Pro Gly Asp Thr Glu Val
385                 390                 395                 400
Gln Glu Ser Ser Gly His Ile Val Gln Gln Ile Ile Arg Pro Thr Gly
            405                 410                 415
Ile Pro Asp Pro Met Pro Glu Ile Arg Pro Ala Thr Gly Gln Val Asp
            420                 425                 430
Asp Leu Leu Glu Glu Ile Arg Leu Arg Leu Ser Gln Lys His Glu Lys
            435                 440                 445
Ile Leu Val Ile Ser Ile Thr Lys Lys Leu Ala Glu Asp Met Ala Gly
        450                 455                 460
Phe Leu Ser Glu Leu Glu Ile Pro Ala Ala Tyr Leu His Ser Gly Ile
465                 470                 475                 480
Glu Thr Ala Glu Arg Thr Gln Ile Leu Thr Asp Leu Arg Ser Gly Val
            485                 490                 495
Ile Asp Val Leu Ile Gly Val Asn Leu Leu Arg Glu Gly Leu Asp Leu
        500                 505                 510
Pro Glu Val Ser Leu Val Ala Ile Leu Asp Ala Asp Lys Glu Gly Phe
        515                 520                 525
Leu Arg Ser Thr Ser Ser Leu Ile Gln Phe Cys Gly Arg Ala Ala Arg
        530                 535                 540
Asn Ile Asn Gly Lys Val Ile Phe Tyr Ala Asp Gln Lys Thr Arg Ser
545                 550                 555                 560
Ile Glu Glu Thr Leu Arg Glu Thr Glu Arg Arg Arg Gln Ile Gln Leu
            565                 570                 575
Asp Tyr Asn Lys Glu His Asn Ile Val Pro Lys Pro Ile Ile Lys Ala
        580                 585                 590
Ile Phe Ala Asn Pro Ile Leu Gln Thr Ser Lys Asp Ser Glu Ser Pro
        595                 600                 605
Lys Glu Ser Gln Arg Pro Leu Ser Lys Glu Asp Leu Glu Glu Gln Ile
    610                 615                 620
Lys Lys Tyr Glu Ala Leu Met Gln Arg Ala Ala Lys Glu Phe Arg Phe
625                 630                 635                 640
Asn Glu Ala Ala Lys Tyr Arg Asp Ala Met Gln Ala Cys Lys Glu Gln
            645                 650                 655
Leu Leu Tyr Leu Phe
            660


        <210> 804
        <211> 351
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 804
        Ser Thr Ser Ile Ala Asp Val Met Asn Lys Lys Lys Arg Val Leu Thr
        1               5                   10                  15
        Gly Asp Arg Pro Thr Gly Lys Leu His Leu Gly His Trp Val Gly Ser
                    20                  25                  30
        Ile Lys Asn Arg Leu Glu Leu Gln Asn Ser Pro Glu Tyr Asp Cys Phe
                    35                  40                  45
        Phe Ile Ile Ala Asp Leu His Thr Leu Thr Thr Lys Ile Arg Lys Glu
        50                  55                  60
```

1022

Glu Val Leu Asp Val Asp Asn His Ile Tyr Glu Val Leu Ala Asp Trp
65   70   75   80
Leu Ser Val Gly Ile Asp Pro Thr Lys Ser Ile Ile Tyr Leu Gln Ser
                85   90   95
Ala Ile Pro Glu Ile Tyr Glu Leu His Leu Leu Phe Ser Met Leu Ile
            100   105   110
Ser Ile Asn Arg Val Met Gly Ile Pro Ser Leu Lys Asp Met Ala Arg
        115   120   125
Asn Ala Ser Ile Glu Glu Gly Ser Leu Ser Tyr Gly Leu Ile Gly Tyr
    130   135   140
Pro Ile Leu Gln Ser Ala Asp Ile Leu Leu Ala Lys Ala Gln Phe Val
145   150   155   160
Pro Val Gly Lys Asp Asn Glu Ala His Val Glu Leu Thr Arg Asp Ile
                165   170   175
Ala Arg Asn Phe Asn Arg Leu Tyr Gly Gln Val Phe Pro Glu Pro Glu
            180   185   190
Val Leu Gln Gly Glu Leu Thr Ser Leu Val Gly Ile Asp Gly Gln Gly
    195   200   205
Lys Met Ser Lys Ser Ala Asn Asn Ala Ile Tyr Leu Ser Asp Ser Asp
    210   215   220
Ala Thr Ile Thr Glu Lys Val Arg Lys Met Tyr Thr Asp Pro Asn Arg
225   230   235   240
Ile Arg Ala Thr Thr Pro Gly Arg Val Glu Gly Asn Pro Leu Phe Ile
                245   250   255
Tyr His Asp Ile Phe Asn Pro His Lys Asp Glu Val Glu Glu Phe Lys
            260   265   270
Ala Arg Tyr Arg Gln Gly Cys Ile Lys Asp Ile Glu Val Lys Ala Arg
        275   280   285
Leu Ala Glu Glu Leu Ile His Phe Leu Lys Pro Ile Lys Glu Arg Arg
    290   295   300
Ser Glu Phe Leu Ser Lys Pro Leu Ala Leu Gln Asn Val Leu Glu Asp
305   310   315   320
Gly Thr His Lys Met Arg Glu Val Ala Lys Val Thr Met Glu Glu Val
                325   330   335
His Asp Lys Phe Gly Phe Ser His Lys Trp Arg Ser Leu Leu Lys
            340   345   350

<210> 805
<211> 185
<212> PRT
<213> Chlamydia pneumoniae

<400> 805
Phe Met Ala Ala Lys Thr Lys Thr Leu Glu Leu Glu Asp Asn Val Phe
1   5   10   15
Leu Leu Leu Glu Gly Asn Leu Lys Arg Ile Phe Ala Thr Pro Ile Gly
            20   25   30
Tyr Thr Thr Phe Arg Glu Phe Gln Asn Val Val Phe Asn Cys Ala Asn
        35   40   45
Gly Gln Gln Glu Ile Ala Asn Phe Phe Phe Glu Met Leu Ile Asn Gly
    50   55   60
Lys Leu Thr Gln Glu Leu Ala Pro Gln Gln Lys Gln Ala Ala His Ser
65   70   75   80
Leu Ile Ala Glu Phe Met Met Pro Ile Arg Val Ala Lys Asp Ile His
            85   90   95
Glu Arg Gly Glu Phe Ile Asn Phe Ile Thr Ser Asp Met Leu Thr Gln
        100   105   110
Gln Glu Arg Cys Ile Phe Leu Asn Arg Leu Ala Arg Val Asp Gly Gln
        115   120   125
Glu Phe Leu Leu Met Thr Asp Val Gln Asn Thr Cys His Leu Ile Arg
    130   135   140

1023

His Leu Leu Ala Arg Leu Leu Glu Ala Gln Lys Asn Pro Val Gly Glu
145   150   155   160
Lys Asn Leu Gln Glu Ile Gln Glu Glu Ile Thr Ser Leu Lys Asn His
               165   170   175
Phe Asp Glu Leu Thr Lys Ala Leu Gln
          180   185

<210> 806
<211> 255
<212> PRT
<213> Chlamydia pneumoniae

<400> 806
Glu Ile Phe Ser Ser Met Gly Asn Leu Lys Thr Leu Leu Glu Ser Arg
1   5   10   15
Phe Lys Lys Asn Thr Pro Thr Lys Met Glu Ala Leu Ala Arg Lys Arg
          20   25   30
Met Glu Gly Asp Pro Ser Pro Leu Ala Val Arg Leu Ser Asn Pro Thr
     35   40   45
Leu Ser Ser Lys Glu Lys Glu Gln Leu Arg His Leu Leu Gln His Tyr
50   55   60
Asn Phe Arg Glu Gln Ile Glu Glu Pro Asp Leu Thr Gln Leu Cys Thr
65   70   75   80
Leu Ser Ala Glu Val Lys Gln Ile His His Gln Ser Val Leu Leu His
               85   90   95
Gly Glu Arg Ile Thr Lys Val Arg Asp Leu Leu Lys Ser Tyr Arg Glu
          100   105   110
Gly Ala Phe Ser Ser Trp Leu Leu Leu Thr Tyr Gly Asn Arg Gln Thr
     115   120   125
Pro Tyr Asn Phe Leu Val Tyr Tyr Glu Leu Phe Thr Leu Leu Pro Glu
     130   135   140
Pro Leu Lys Ile Glu Met Glu Lys Met Pro Arg Gln Ala Val Tyr Thr
145   150   155   160
Leu Ala Ser Arg Gln Gly Pro Gln Glu Lys Lys Glu Glu Ile Ile Arg
               165   170   175
Asn Tyr Arg Gly Glu Arg Lys Ser Glu Leu Leu Asp Arg Ile Arg Lys
          180   185   190
Glu Phe Pro Leu Val Glu Thr Asp Cys Arg Lys Thr Ser Pro Val Lys
     195   200   205
Gln Ala Leu Ala Met Leu Thr Lys Gly Ser Gln Ile Leu Thr Lys Cys
     210   215   220
Thr Ser Leu Ser Ser Asp Glu Gln Ile Ile Leu Glu Lys Leu Ile Lys
225   230   235   240
Lys Leu Glu Lys Val Lys Ser Asn Leu Phe Pro Asp Thr Lys Val
               245   250   255

<210> 807
<211> 260
<212> PRT
<213> Chlamydia pneumoniae

<400> 807
Gly Tyr Ala Ser Arg Met Lys Thr Ile Ala Val Asn Ser Phe Lys Gly
1   5   10   15
Gly Thr Ala Lys Thr Ser Thr Thr Leu His Leu Gly Ala Ala Leu Ala
          20   25   30
Gln Tyr His Gln Ala Arg Val Leu Leu Ile Asp Phe Asp Ala Gln Ala
     35   40   45
Asn Leu Thr Ser Gly Leu Gly Leu Asp Pro Asp Cys Tyr Asp Ser Leu
50   55   60

1024

```
Ala Val Val Leu Gln Gly Glu Lys Glu Ile Gln Glu Val Ile Arg Pro
65              70              75              80
Ile Gln Asp Thr Gln Leu Asp Leu Ile Pro Ala Asp Thr Trp Leu Glu
                85              90              95
Arg Ile Glu Val Ser Gly Asn Leu Ala Ala Asp Arg Tyr Ser His Glu
            100             105             110
Arg Leu Lys Tyr Val Leu Gly Ser Val Gln Asp Lys Tyr Asp Tyr Val
        115             120             125
Ile Ile Asp Thr Pro Pro Ser Leu Cys Trp Leu Thr Glu Ser Ala Leu
    130             135             140
Ile Ala Ala Asp Tyr Ala Leu Ile Cys Ala Thr Pro Glu Phe Tyr Ser
145             150             155             160
Val Lys Gly Leu Glu Arg Leu Ala Gly Phe Ile Gln Gly Ile Ser Ala
                165             170             175
Arg His Pro Leu Thr Ile Leu Gly Val Ala Leu Ser Phe Trp Asn Cys
            180             185             190
Arg Gly Lys Asn Asn Ser Ala Phe Ala Glu Leu Ile His Lys Thr Phe
        195             200             205
Pro Gly Lys Leu Leu Asn Thr Lys Ile Arg Arg Asp Ile Thr Val Ser
    210             215             220
Glu Ala Ala Ile His Gly Lys Pro Val Phe Ala Thr Ser Pro Ser Ala
225             230             235             240
Arg Ala Ser Glu Asp Tyr Phe Asn Leu Thr Lys Glu Leu Leu Ile Leu
                245             250             255
Leu Arg Asp Ile
            260


        <210> 808
        <211> 650
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 808
Asn Ala Asn Asn Glu Ser Pro Pro Asn Met Glu Ala Trp Asn Lys Met
1               5               10              15
Ile Gln Val Thr Cys Asp Gln Lys Asn Tyr Glu Val Leu Glu Gly Thr
            20              25              30
Thr Ala Ala Glu Leu Ala Lys Gln Leu Lys Asn Ser His Gln Phe Ile
        35              40              45
Gly Val Leu Ile Asn Glu Arg Pro Arg Asp Leu Ser Thr His Leu Asn
    50              55              60
Glu Gly Asp Thr Leu Val Phe Leu Thr Ser Glu Asp Pro Glu Gly Arg
65              70              75              80
Glu Ile Phe Leu His Thr Ser Ala His Leu Leu Ala Gln Ala Val Leu
                85              90              95
Arg Leu Trp Pro Asp Ala Ile Pro Thr Ile Gly Pro Val Ile Asp His
            100             105             110
Gly Phe Tyr Tyr Asp Phe Ala Asn Leu Ser Ile Ser Glu Ser Asp Phe
        115             120             125
Pro Leu Ile Glu Asp Thr Val Lys Gln Ile Val Asp Glu Lys Leu Ala
    130             135             140
Ile Ser Arg Phe Thr Tyr Gly Asp Lys Gln Gln Ala Leu Ala Gln Phe
145             150             155             160
Pro Gln Asn Pro Phe Lys Thr Glu Leu Ile Arg Glu Leu Pro Glu Asn
                165             170             175
Glu Glu Ile Ser Ala Tyr Ser Gln Gly Glu Phe Phe Asp Leu Cys Arg
            180             185             190
Gly Pro His Leu Pro Ser Thr Ala His Val Lys Ala Phe Lys Val Leu
        195             200             205
Arg Thr Ser Ala Ala Tyr Trp Arg Gly Asp Pro Ser Arg Glu Ser Leu
    210             215             220
```

1025

Val Arg Ile Tyr Gly Thr Ser Phe Pro Thr Ser Lys Glu Leu Arg Ala
225   230   235   240
His Leu Glu Gln Ile Glu Glu Ala Lys Lys Arg Asp His Arg Val Leu
                245   250   255
Gly Ala Lys Leu Asp Leu Phe Ser Gln Gln Glu Ser Ser Pro Gly Met
            260   265   270
Pro Phe Phe His Pro Arg Gly Met Ile Val Trp Asp Ala Leu Ile Arg
        275   280   285
Tyr Trp Lys Gln Leu His Thr Ala Ala Gly Tyr Lys Glu Ile Leu Thr
    290   295   300
Pro Gln Leu Met Asn Arg Gln Leu Trp Glu Val Ser Gly His Trp Asp
305   310   315   320
Asn Tyr Lys Ala Asn Met Tyr Thr Leu Gln Ile Asp Asp Glu Asp Tyr
                325   330   335
Ala Ile Lys Pro Met Asn Cys Pro Gly Cys Met Leu Tyr Tyr Lys Thr
                340   345   350
Arg Leu His Ser Tyr Lys Glu Phe Pro Leu Arg Val Ala Glu Val Gly
            355   360   365
His Val His Arg Gln Glu Ala Ser Gly Ala Leu Ser Gly Leu Met Arg
            370   375   380
Val Arg Ala Phe His Gln Asp Asp Ala His Val Phe Leu Thr Pro Glu
385   390   395   400
Gln Val Glu Glu Glu Thr Leu Asn Ile Leu Gln Leu Val Ser Thr Leu
                405   410   415
Tyr Gly Thr Phe Gly Leu Glu Tyr His Leu Glu Leu Ser Thr Arg Pro
            420   425   430
Glu Lys Asp Thr Ile Gly Asp Asp Ser Leu Trp Glu Leu Ala Thr Asp
            435   440   445
Ala Leu Asn Arg Ala Leu Val Gln Ser Gly Thr Pro Phe Ile Val Arg
    450   455   460
Pro Gly Glu Gly Ala Phe Tyr Gly Pro Lys Ile Asp Ile His Val Lys
465   470   475   480
Asp Ala Ile Gln Arg Thr Trp Gln Cys Gly Thr Ile Gln Leu Asp Met
                485   490   495
Phe Leu Pro Glu Arg Phe Glu Leu Glu Tyr Thr Thr Ala Gln Gly Thr
            500   505   510
Lys Ser Val Pro Val Met Leu His Arg Ala Leu Phe Gly Ser Ile Glu
    515   520   525
Arg Phe Leu Gly Ile Leu Ile Glu Asn Phe Lys Gly Arg Phe Pro Leu
    530   535   540
Trp Leu Ser Pro Glu Gln Val Arg Ile Ile Thr Val Ala Asp Arg His
545   550   555   560
Ile Pro Arg Ala Lys Glu Leu Glu Glu Ala Trp Lys Arg Leu Gly Leu
                565   570   575
Val Val Thr Leu Asp Asp Ser Ser Glu Ser Val Ser Lys Lys Ile Arg
            580   585   590
Asn Ala Gln Asn Met Gln Val Asn Tyr Met Ile Thr Leu Gly Asp His
            595   600   605
Glu Ile Asn Glu Asn Val Leu Ala Val Arg Thr Arg Asp Asn Arg Val
    610   615   620
Ile Asn Asp Val Ser Val Glu Arg Phe Leu Asn Thr Ile Leu Glu Glu
625   630   635   640
Lys Asn Ser Leu Ser Leu Thr Ala Leu Leu
                645   650

<210> 809
<211> 310
<212> PRT
<213> Chlamydia pneumoniae

1026

<400> 809

```
Thr Leu Gln Thr Gly Leu His Met Ser Leu Phe Leu Val Phe Leu Thr
1               5                   10                  15
Ala Phe Ile Trp Ser Ser Ser Phe Ala Leu Ser Lys Leu Val Met Asn
            20                  25                  30
Ala Ser Ala Pro Ile Phe Ala Thr Gly Ala Arg Met Val Ile Ala Gly
        35                  40                  45
Ala Ile Leu Ala Leu Ala Ala Trp Phe Arg Gly Gly Phe Val Gly Ile
    50                  55                  60
Ser Lys Lys Ile Phe Leu Tyr Ile Val Leu Leu Ala Leu Thr Gly Phe
65                  70                  75                  80
Tyr Leu Thr Asn Ile Phe Glu Phe Ile Gly Leu Gln Ser Leu Ser Ser
                85                  90                  95
Ser Lys Thr Cys Phe Ile Tyr Gly Leu Ser Pro Leu Met Ser Ala Leu
            100                 105                 110
Phe Ser Tyr Ile Gln Leu Lys Glu Lys Val Thr Leu Lys Lys Val Leu
            115                 120                 125
Gly Leu Ser Leu Gly Leu Val Ser Tyr Ile Cys Tyr Leu Thr Phe Gly
    130                 135                 140
Gly Gly Gly Asp Asp Ser Gln Pro Trp Thr Trp Gln Ile Gly Leu Pro
145                 150                 155                 160
Glu Leu Leu Ile Leu Gly Ala Ala Ser Leu Ala Ser Phe Gly Trp Thr
                165                 170                 175
Leu Leu Arg Gln Ile Glu Lys Gln Ser Thr Leu Ser Val Thr Ala Ile
                180                 185                 190
Asn Ala Tyr Ala Met Leu Ile Ala Gly Met Leu Ser Ile Met His Ser
            195                 200                 205
Ala Val Val Glu Pro Trp Arg Pro Leu Pro Val Gln Asp Ile Ser Gln
    210                 215                 220
Phe Leu Tyr Ala Thr Leu Ala Leu Val Val Ile Ser Asn Leu Ile Cys
225                 230                 235                 240
Tyr Asn Leu Tyr Ala Lys Leu Leu Arg Lys Tyr Ser Ser Thr Phe Leu
                245                 250                 255
Ser Phe Cys Asn Leu Val Met Pro Leu Tyr Ser Gly Phe Tyr Gly Trp
            260                 265                 270
Ile Leu Leu Gly Glu Lys Gly Val Ser Leu Gly Leu Val Leu Ala Val
    275                 280                 285
Ala Phe Met Val Ala Gly Cys Arg Leu Ile Tyr His Glu Glu Phe Arg
    290                 295                 300
Gln Gly Tyr Ile Val Ser
305                 310
```

<210> 810
<211> 481
<212> PRT
<213> Chlamydia pneumoniae

<400> 810

```
Leu Lys Lys Leu Pro Ser Trp Ala Leu Lys Ser Leu Lys Arg Met Pro
1               5                   10                  15
Gln Ser Ala Glu Pro Ser Leu Ala His Ile Lys Pro Ile Ile Phe Lys
            20                  25                  30
Gly Ala Cys Ile Ala Met Thr Ser Gly Val Ser Gly Ser Ser Ser Gln
        35                  40                  45
Asp Pro Thr Leu Ala Ala Gln Leu Ala Gln Ser Ser Gln Lys Ala Gly
    50                  55                  60
Asn Ala Gln Ser Gly His Asp Thr Lys Asn Val Thr Lys Gln Gly Ala
65                  70                  75                  80
Gln Ala Glu Val Ala Ala Gly Gly Phe Glu Asp Leu Ile Gln Asp Ala
                85                  90                  95
```

Ser Ala Gln Ser Thr Gly Lys Lys Glu Ala Thr Ser Ser Thr Thr Lys
            100   105   110
Ser Ser Lys Gly Glu Lys Ser Glu Lys Ser Gly Lys Ser Lys Ser Ser
        115   120   125
Thr Ser Val Ala Ser Ala Ser Glu Thr Ala Thr Ala Gln Ala Val Gln
        130   135   140
Gly Pro Lys Gly Leu Arg Gln Asn Asn Tyr Asp Ser Pro Ser Leu Pro
145   150   155   160
Thr Pro Glu Ala Gln Thr Ile Asn Gly Ile Val Leu Lys Lys Gly Met
                165   170   175
Gly Thr Leu Ala Leu Leu Gly Leu Val Met Thr Leu Met Ala Asn Ala
            180   185   190
Ala Gly Glu Ser Trp Lys Ala Ser Phe Gln Ser Gln Asn Gln Ala Ile
        195   200   205
Arg Ser Gln Val Glu Ser Ala Pro Ala Ile Gly Glu Ala Ile Lys Arg
210   215   220
Gln Ala Asn His Gln Ala Ser Ala Thr Glu Ala Gln Ala Lys Gln Ser
225   230   235   240
Leu Ile Ser Gly Ile Val Asn Ile Val Gly Phe Thr Val Ser Val Gly
            245   250   255
Ala Gly Ile Phe Ser Ala Ala Lys Gly Ala Thr Ser Ala Leu Lys Ser
            260   265   270
Ala Ser Phe Ala Lys Glu Thr Gly Ala Ser Ala Ala Gly Gly Ala Ala
        275   280   285
Ser Lys Ala Leu Thr Ser Ala Ser Ser Ser Val Gln Gln Thr Met Ala
        290   295   300
Ser Thr Ala Lys Ala Ala Thr Thr Ala Ala Ser Ser Ala Gly Ser Ala
305   310   315   320
Ala Thr Lys Ala Ala Ala Asn Leu Thr Asp Asp Met Ala Ala Ala Ala
                325   330   335
Ser Lys Met Ala Ser Asp Gly Ala Ser Lys Ala Ser Gly Gly Leu Phe
            340   345   350
Gly Glu Val Leu Asn Lys Pro Asn Trp Ser Glu Lys Val Ser Arg Gly
            355   360   365
Met Asn Val Val Lys Thr Gln Gly Ala Arg Val Ala Ser Phe Ala Gly
    370   375   380
Asn Ala Leu Ser Ser Ser Met Gln Met Ser Gln Leu Met His Gly Leu
385   390   395   400
Thr Ala Ala Val Glu Gly Leu Ser Ala Gly Gln Thr Gly Ile Glu Val
                405   410   415
Ala His His Gln Arg Leu Ala Gly Gln Ala Glu Ala Gln Ala Glu Val
            420   425   430
Leu Lys Gln Met Ser Ser Val Tyr Gly Gln Gln Ala Gly Gln Ala Gly
        435   440   445
Gln Leu Gln Glu Gln Ala Met Gln Ser Phe Asn Thr Ala Leu Gln Thr
    450   455   460
Leu Gln Asn Ile Ala Asp Ser Gln Thr Gln Thr Thr Ser Ala Ile Phe
465   470   475   480
Asn

        <210> 811
        <211> 496
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 811
Asp Thr Asn Met Ser Ile Ser Ser Ser Ser Gly Pro Asp Asn Gln Lys
1   5   10   15
Asn Ile Met Ser Gln Val Leu Thr Ser Thr Pro Gln Gly Val Pro Gln
            20   25   30

1028

```
Gln Asp Lys Leu Ser Gly Asn Glu Thr Lys Gln Ile Gln Gln Thr Arg
            35                  40                  45
Gln Gly Lys Asn Thr Glu Met Glu Ser Asp Ala Thr Ile Ala Gly Ala
    50                  55                  60
Ser Gly Lys Asp Lys Thr Ser Ser Thr Thr Lys Thr Glu Thr Ala Pro
65                  70                  75                  80
Gln Gln Gly Val Ala Ala Gly Lys Glu Ser Ser Glu Ser Gln Lys Ala
            85                  90                  95
Gly Ala Asp Thr Gly Val Ser Gly Ala Ala Ala Thr Thr Ala Ser Asn
            100                 105                 110
Thr Ala Thr Lys Ile Ala Met Gln Thr Ser Ile Glu Glu Ala Ser Lys
    115                 120                 125
Ser Met Glu Ser Thr Leu Glu Ser Leu Gln Ser Leu Ser Ala Ala Gln
    130                 135                 140
Met Lys Glu Val Glu Ala Val Val Val Ala Ala Leu Ser Gly Lys Ser
145                 150                 155                 160
Ser Gly Ser Ala Lys Leu Glu Thr Pro Glu Leu Pro Lys Pro Gly Val
            165                 170                 175
Thr Pro Arg Ser Glu Val Ile Glu Ile Gly Leu Ala Leu Ala Lys Ala
            180                 185                 190
Ile Gln Thr Leu Gly Glu Ala Thr Lys Ser Ala Leu Ser Asn Tyr Ala
            195                 200                 205
Ser Thr Gln Ala Gln Ala Asp Gln Thr Asn Lys Leu Gly Leu Glu Lys
    210                 215                 220
Gln Ala Ile Lys Ile Asp Lys Glu Arg Glu Glu Tyr Gln Glu Met Lys
225                 230                 235                 240
Ala Ala Glu Gln Lys Ser Lys Asp Leu Glu Gly Thr Met Asp Thr Val
            245                 250                 255
Asn Thr Val Met Ile Ala Val Ser Val Ala Ile Thr Val Ile Ser Ile
            260                 265                 270
Val Ala Ala Ile Phe Thr Cys Gly Ala Gly Leu Ala Gly Leu Ala Ala
            275                 280                 285
Gly Ala Ala Val Gly Ala Ala Ala Ala Gly Gly Ala Ala Gly Ala Ala
    290                 295                 300
Ala Ala Thr Thr Val Ala Thr Gln Ile Thr Val Gln Ala Val Val Gln
305                 310                 315                 320
Ala Val Lys Gln Ala Val Ile Thr Ala Val Arg Gln Ala Ile Thr Ala
            325                 330                 335
Ala Ile Lys Ala Ala Val Lys Ser Gly Ile Lys Ala Phe Ile Lys Thr
            340                 345                 350
Leu Val Lys Ala Ile Ala Lys Ala Ile Ser Lys Gly Ile Ser Lys Val
    355                 360                 365
Phe Ala Lys Gly Thr Gln Met Ile Ala Lys Asn Phe Pro Lys Leu Ser
    370                 375                 380
Lys Val Ile Ser Ser Leu Thr Ser Lys Trp Val Thr Val Gly Val Gly
385                 390                 395                 400
Val Val Val Ala Ala Pro Ala Leu Gly Lys Gly Ile Met Gln Met Gln
            405                 410                 415
Leu Ser Glu Met Gln Gln Asn Val Ala Gln Phe Gln Lys Glu Val Gly
            420                 425                 430
Lys Leu Gln Ala Ala Ala Asp Met Ile Ser Met Phe Thr Gln Phe Trp
    435                 440                 445
Gln Gln Ala Ser Lys Ile Ala Ser Lys Gln Thr Gly Glu Ser Asn Glu
    450                 455                 460
Met Thr Gln Lys Ala Thr Lys Leu Gly Ala Gln Ile Leu Lys Ala Tyr
465                 470                 475                 480
Ala Ala Ile Ser Gly Ala Ile Ala Gly Ala His Lys Thr Asn Asn Phe
            485                 490                 495
```

1029

<210> 812
<211> 123
<212> PRT
<213> Chlamydia pneumoniae

<400> 812
Gly Glu Ile Met Asn Lys Lys Pro Lys Lys Thr Lys Lys Ala Val Gln
1   5   10   15
Ser Lys Ala Ala Pro Val Lys Arg Val Pro Glu Glu Ser Gln Glu Ala
        20   25   30
Ala Ile Gln Gln Leu Glu Leu Ala Val Ser Asp Leu Tyr Lys Glu Leu
        35   40   45
Pro Leu Ala Gln Thr Phe Ala Ser Leu Thr Asp Lys Asn Gln Ile Asn
    50   55   60
Ser Ile Ile Ala Ala Leu Ser Gly Thr Leu Glu Ser Leu His Leu Glu
65   70   75   80
Glu Leu Thr Gln Gly Leu Phe Pro Ser Ala Gln Glu Asp Ala Asn Phe
                85   90   95
Ala Lys Glu Leu Ser Ser Val Val His Gly Leu Lys Asn Leu Thr Thr
            100   105   110
Val Val Asn Lys Gln Met Val Lys Gly Ala Glu
            115   120

<210> 813
<211> 242
<212> PRT
<213> Chlamydia pneumoniae

<400> 813
Ile Gln Asn Asn Phe Ile Leu Gly Ile Arg Ser Met Ser Lys Pro Ser
1   5   10   15
Pro Arg Asn Ala Asn Gln Pro Gln Lys Pro Ser Ala Ser Phe Asn Lys
        20   25   30
Lys Thr Arg Ser Arg Leu Ala Glu Leu Ala Ala Gln Lys Lys Ala Lys
        35   40   45
Ala Asp Asp Leu Glu Gln Val His Pro Val Pro Thr Glu Glu Glu Ile
    50   55   60
Lys Lys Ala Leu Gly Asn Ile Phe Glu Gly Leu Ser Asn Gly Leu Asp
65   70   75   80
Leu Gln Gln Ile Leu Gly Leu Ser Asp Tyr Leu Leu Glu Glu Ile Tyr
                85   90   95
Thr Val Ala Tyr Thr Phe Tyr Ser Gln Gly Lys Tyr Asn Glu Ala Val
            100   105   110
Gly Leu Phe Gln Leu Leu Ala Ala Ala Gln Pro Gln Asn Tyr Lys Tyr
            115   120   125
Met Leu Gly Leu Ser Ser Cys Tyr His Gln Leu His Leu Tyr Asn Glu
    130   135   140
Ala Ala Phe Gly Phe Phe Leu Ala Phe Asp Ala Gln Pro Asp Asn Pro
145   150   155   160
Ile Pro Pro Tyr Tyr Ile Ala Asp Ser Leu Leu Lys Leu Gln Gln Pro
                165   170   175
Glu Glu Ser Asn Asn Phe Leu Asp Val Thr Met Asp Ile Cys Gly Asn
            180   185   190
Asn Pro Glu Phe Lys Ile Leu Lys Glu Arg Cys Gln Ile Met Lys Gln
        195   200   205
Ser Ile Glu Lys Gln Met Ala Gly Glu Thr Lys Lys Ala Pro Thr Lys
    210   215   220
Lys Pro Ala Gly Lys Ser Lys Thr Thr Thr Asn Lys Lys Ser Gly Lys
225   230   235   240
Lys Arg

1030

<210> 814
<211> 594
<212> PRT
<213> Chlamydia pneumoniae

<400> 814

```
Gly Ile Leu Ile Cys Trp Leu Gly Asn Leu Thr Lys Ala Pro Met Ser
1               5                  10                  15
Thr Arg Arg Pro Ile Gln Leu Leu Asp Pro Leu Thr Ile Asn Gln Ile
            20                  25                  30
Ala Ala Gly Glu Val Ile Glu Asn Ser Val Ser Val Val Lys Glu Leu
        35                  40                  45
Ile Glu Asn Ser Leu Asp Ala Gly Ala Asp Glu Ile Glu Ile Glu Thr
    50                  55                  60
Leu Gly Gly Gly Gln Gly Ala Ile Ile Ile Arg Asp Asn Gly Cys Gly
65                  70                  75                  80
Phe Arg Ala Glu Asp Ile Pro Ile Ala Leu Gln Arg His Ala Thr Ser
                85                  90                  95
Lys Ile Arg Glu Phe Ser Asp Ile Phe Ser Leu Asn Ser Phe Gly Phe
            100                 105                 110
Arg Gly Glu Ala Leu Pro Ser Ile Ala Ser Ile Ser Lys Met Glu Ile
        115                 120                 125
Gln Ser Ser Ile Glu Gly Asp Glu Gly Val Arg Thr Val Ile His Gly
    130                 135                 140
Gly Asp Ile Val Ser Cys Glu Pro Cys Ala Arg Gln Leu Gly Thr Thr
145                 150                 155                 160
Val Ile Val Asn Ser Leu Phe Tyr Asn Val Pro Val Arg Arg Gly Phe
                165                 170                 175
Gln Lys Ser Met Gln Ser Asp Arg Leu Gly Ile Arg Lys Leu Ile Glu
            180                 185                 190
Asn Arg Ile Leu Ser Thr Ala Asn Ile Gly Trp Ser Trp Ile Ser Glu
        195                 200                 205
Gly His His Glu Ile Gln Ile Ala Lys Gln Gln Gly Phe Gln Glu Arg
    210                 215                 220
Val Ala Tyr Val Met Gly Asp His Phe Met Gln Asp Ala Leu Thr Ile
225                 230                 235                 240
Asp Lys Glu Ala Asn Gly Val Arg Ile Val Gly Val Leu Gly Ser Pro
                245                 250                 255
Ser Phe His Arg Pro Thr Arg Gln Gly Gln Lys Ile Phe Ile Asn Asp
            260                 265                 270
Arg Pro Ile Glu Ser Leu Phe Ile Ser Lys Lys Val Gly Asp Ala Tyr
        275                 280                 285
Ala Leu Leu Leu Pro Leu His Arg Tyr Pro Val Phe Val Leu Lys Leu
    290                 295                 300
Tyr Leu Pro Ser Ser Trp Cys Asp Phe Asn Val His Pro Gln Lys Ile
305                 310                 315                 320
Glu Ala Arg Ile Leu Lys Glu Glu Leu Val Gly Asp Cys Ile Lys Glu
            325                 330                 335
Ala Ile Val Glu Thr Leu Ala Cys Pro Pro Gly Ile Leu Cys Arg Thr
        340                 345                 350
His Gln Glu Ile Glu Glu Ser Asp Ser Val Pro Leu Pro Met Phe Arg
    355                 360                 365
Met Leu Glu Thr Ser Asp Val Gln Glu Glu Glu Ser Val Glu Phe Asp
370                 375                 380
Gln Asn Leu Phe Ala Tyr Ser Ser Glu Asp Val Ser Leu Glu Lys Gln
385                 390                 395                 400
Glu Tyr Thr Ser Arg Gly Pro Lys Ser Gln Met Asp Trp Ile Tyr Ser
                405                 410                 415
Ser Asp Val Arg Phe Leu Thr Ser Leu Gly Arg Val Val Leu Ala Glu
            420                 425                 430
```

```
Asp Leu Glu Gly Val His Ile Ile Phe Thr Ala Ala Ala Arg Lys His
            435                 440                 445
Leu Phe Phe Leu Ser Leu Met Gln Glu Asn Ser Arg Met Tyr Gln Ser
    450                 455                 460
Gln Ala Leu Leu Ile Pro Leu Arg Leu Gln Val Thr Pro Glu Glu Ala
465                 470                 475                 480
Phe Phe Phe Ser His His Gly Arg Thr Leu Cys Asp Leu Gly Ile Glu
                485                 490                 495
Ile Ser Gln Val Gly Pro Cys Val Phe Ser Ile Glu Ser Thr Pro Thr
                500                 505                 510
Val Ile Gly Glu Glu Glu Leu Lys Glu Trp Leu Leu Leu Leu Ala Ala
            515                 520                 525
Arg Gly Ser Thr Asp Ile Asn Ser Glu Ala Leu Thr Ala Leu Met Lys
    530                 535                 540
Glu Thr Leu Thr Gln Ala Thr Phe Ser Lys His Gln His Val Phe Asp
545                 550                 555                 560
Val Ser Trp Leu Lys Leu Leu Trp Ser Val Gly Lys Pro Glu Lys Gly
                565                 570                 575
Phe Asp Gly Ala Arg Ile Arg Arg Leu Ile Leu Asp Ser Asp Phe Met
                580                 585                 590
Glu Gly


        <210> 815
        <211> 364
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 815
Thr Leu Ile Leu Trp Lys Asp Asn His Met Ser His Asp Arg Ile Leu
1               5                   10                  15
Arg Ala Gln Arg Ala Leu Ser Glu His Asn Leu Asp Ala Ile Leu Val
            20                  25                  30
Glu Lys Ser Glu Asp Leu Ala Tyr Phe Leu His Asp Glu Ala Ile Ala
        35                  40                  45
Gly Ile Leu Leu Ile Gly Gln Gln Glu Val Met Phe Phe Val Tyr Arg
    50                  55                  60
Met Asp Lys Asp Leu Tyr Ser His Ile Gln Arg Val Pro Leu Thr Phe
65                  70                  75                  80
Leu Thr Gln Asp Val Val Ala Asp Leu Ser Leu Tyr Val Gln Lys Gln
                85                  90                  95
Arg Tyr Gln Lys Ile Gly Phe Asp Ser Ala Ser Thr Val Tyr His Lys
            100                 105                 110
Phe Ala Gln Arg Gln Val Leu Pro Cys Leu Trp Glu Pro Leu Glu Cys
        115                 120                 125
Phe Thr Glu Lys Ile Arg Ser Ile Lys Ser Glu Glu Glu Ile Arg Arg
    130                 135                 140
Met Gln Glu Ala Ala Ala Leu Gly Ser Ala Gly Tyr Asp Tyr Val Leu
145                 150                 155                 160
Thr Leu Leu Arg Glu Gly Ile Thr Glu Lys Glu Val Val Arg Gln Leu
                165                 170                 175
Arg Ala Phe Trp Ala Glu Ala Gly Ala Glu Gly Pro Ser Phe Pro Pro
            180                 185                 190
Ile Ile Ala Phe Gly Glu His Ser Ala Phe Pro His Ser Ile Pro Thr
        195                 200                 205
Asp Arg Pro Leu Lys Lys Gly Asp Ile Val Leu Ile Asp Ile Gly Val
    210                 215                 220
Leu Leu Asn Gly Tyr Cys Ser Asp Met Thr Arg Met Thr Ala Leu Gly
225                 230                 235                 240
Thr Pro His Pro Lys Leu Leu Glu Ser Tyr Pro Val Val Val Glu Ala
                245                 250                 255
```

```
Gln Lys Arg Ala Met Ala Leu Cys Lys Glu Gly Val Leu Trp Gly Asp
            260                 265                 270
Ile Asp Ala Glu Ala Val Arg Val Leu Arg Glu His His Leu Asp Thr
        275                 280                 285
Tyr Phe Ile His Gly Ile Gly His Gly Val Gly Arg His Ile His Glu
    290                 295                 300
Tyr Pro Cys Ser Pro Arg Gly Ser Gln Val Lys Leu Glu Ser Gly Met
305                 310                 315                 320
Thr Ile Thr Val Glu Pro Gly Val Tyr Phe Pro Gly Ile Gly Gly Ile
                325                 330                 335
Arg Ile Glu Asp Thr Leu Cys Ile Asp Lys Asn Lys Asn Phe Ser Leu
            340                 345                 350
Thr Ala Arg Pro Val Ile Ser Glu Leu Val Cys Leu
            355                 360
```

<210> 816
<211> 454
<212> PRT
<213> Chlamydia pneumoniae

```
<400> 816
Phe Phe Leu Phe Phe Lys Leu Ser Tyr Asn Phe Ile Phe Asn Leu Pro
1               5                   10                  15
Leu Thr Met Tyr Gln Leu Leu Ser Ile Gly Tyr Ser Phe Val Ser Phe
            20                  25                  30
Ile Ala Leu Leu Trp Met Leu Cys Tyr Ser Pro Asn Tyr Val Thr Asp
        35                  40                  45
Leu Tyr Arg Ile Ser Leu Ser Ala Glu Glu Ser Leu Gly Gly Ile Arg
    50                  55                  60
Ala Phe Pro Gln Ala Glu Ser Leu Leu Gly Gly Ala Cys Ala Leu Asn
65              70                  75                  80
Phe Pro Asp Leu Glu Glu Arg Leu Pro Asp Leu Arg Lys Glu Leu Leu
            85                  90                  95
Phe Leu Gly Ser Asn Asp Arg Pro Asp Ala Cys Gly Gly Lys Phe Ser
            100                 105                 110
Leu Gln Leu Ala Ser Ser Lys Glu Cys Tyr Ile Ala Ala Leu Lys Glu
        115                 120                 125
Arg Val Tyr Leu Asn Val Thr Asn Ser Ser Arg Gly Pro Val Tyr Ser
    130                 135                 140
Phe Ser Pro Lys Gly Val Pro Thr Glu Leu Trp Ile Glu Cys Phe Ser
145                 150                 155                 160
Val Ser Val Asp Gly Arg Val Glu Val Lys Val Arg Leu Gln Gly Leu
                165                 170                 175
His Lys Glu Leu Ile Ser Lys Pro Arg Asp Cys Glu Thr Leu Phe Leu
            180                 185                 190
Asn Pro Pro Ala Asn Lys Leu Asp Cys Trp Glu Ile Ala Gly Phe Arg
        195                 200                 205
Val Asp Ala Ser Phe Pro Val Lys Gln Lys Ile Arg Arg Ile Gly Val
    210                 215                 220
Asp Lys Phe Leu Leu Met His Gly Gly Ala Glu Tyr Ala Asp Lys Ala
225                 230                 235                 240
Thr Lys Glu Arg Val Asp Phe Val Ser Ser Asp Glu Glu Asn Tyr Ser
                245                 250                 255
Arg Tyr Leu Ala Val Gly Asp Val Leu Leu Trp Asp Gly Asn Cys Trp
            260                 265                 270
Gln Thr Cys Gly Glu Phe Gln Gly Ala Ser Ser Arg Ala Pro Leu Phe
        275                 280                 285
Glu Val Lys Arg Ile Asp Asp Lys Val Met Ile Ala Asp Leu Trp Asn
    290                 295                 300
Val Gly Gly Thr Gln Arg Gln Thr Ile Ser Leu Val Lys Gly Val Pro
305                 310                 315                 320
```

```
Ser Pro Ile Glu Ile Asn Glu Val Ile Arg Glu Ile Glu Phe Thr Gly
            325                     330                 335
Met Arg Ser Trp Ser Lys Pro Ile Val Leu Val Gly Gly Gln Arg Leu
            340                 345                 350
Ile Leu Ser Pro Asp Asp Trp Val Leu Arg Thr Ala Lys Gly Trp Glu
            355                 360                 365
Lys Leu Ser Arg Ala Asp Gln Ile Gln Asp Tyr Val Thr Gly Lys Val
            370             375                 380
Thr Gly Pro Leu Leu Val Phe Glu Lys Leu Glu Lys Asp Leu Arg Gly
385                 390                 395                 400
Phe Val Leu Arg Gly His Met Phe Asn Ala Gln Arg Thr Leu Val Glu
                405                 410                 415
Thr Ile Ser Leu Pro Leu Lys Gln Gly Phe Glu Pro Ala Val Ala Ser
            420                 425                 430
Gln Glu Val Ser Ser Asn Thr Arg Ser Ala Ala Ala His Pro Gly Ala
            435                 440                 445
Thr Asn Arg Gly Gly Ser
    450
```

```
        <210> 817
        <211> 754
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 817
Met Val Phe Phe Arg Asn Ser Leu Leu His Leu Val Ala Leu Ser Gly
1               5                   10                  15
Met Leu Cys Cys Ser Ser Gly Val Ala Leu Thr Ile Ala Glu Lys Met
            20                  25                  30
Ala Ser Leu Glu His Ser Gly Arg Gly Ala Asp Asp Tyr Glu Gly Met
            35                  40                  45
Ala Ser Phe Asn Ala Asn Met Arg Glu Tyr Ser Leu Gln Leu Ser Lys
            50                  55                  60
Leu Tyr Glu Glu Ala Arg Lys Leu Arg Ala Ser Gly Thr Glu Asp Glu
65                  70                  75                  80
Ala Leu Trp Lys Asp Leu Ile Arg Arg Ile Gly Glu Val Arg Gly Tyr
                85                  90                  95
Leu Arg Glu Ile Glu Glu Leu Trp Ala Ala Glu Ile Arg Glu Lys Gly
            100                 105                 110
Gly Asn Leu Glu Asp Tyr Ala Leu Trp Asn His Pro Glu Thr Thr Ile
            115                 120                 125
Tyr Asn Leu Val Thr Asp Tyr Gly Thr Glu Asp Ser Ile Tyr Leu Ile
            130                 135                 140
Pro Gln Glu Ile Gly Ala Ile Lys Ile Ala Thr Leu Ser Lys Phe Val
145                 150                 155                 160
Val Pro Lys Glu Ser Phe Glu Asp Cys Leu Thr Gln Ile Leu Ser Arg
                165                 170                 175
Leu Gly Ile Gly Val Arg Gln Val Asn Ser Trp Ile Lys Glu Leu Tyr
            180                 185                 190
Met Met Arg Lys Glu Gly Cys Ser Val Ala Gly Val Phe Ser Ser Arg
            195                 200                 205
Lys Asp Leu Glu Ala Leu Pro Glu Thr Ala Tyr Ile Gly Phe Val Leu
            210                 215                 220
Asn Ser Asn Val Asp Ala His Thr Asn Gln His Val Leu Lys Lys Phe
225                 230                 235                 240
Ile Asn Pro Glu Thr Thr His Val Asp Val Ile Ala Gly Arg Val Trp
                245                 250                 255
Ile Phe Gly Ser Ala Gly Glu Val Gly Glu Leu Leu Lys Ile Tyr Asn
            260                 265                 270
Phe Val Gln Ser Glu Ser Ile Arg Gln Glu Tyr Arg Val Ile Pro Leu
            275                 280                 285
```

1034

```
Thr Lys Ile Asp Pro Gly Glu Met Ile Ser Ile Leu Asn Ala Ala Phe
290                 295                 300
Arg Glu Asp Leu Thr Lys Asp Val Ser Glu Glu Ser Leu Gly Leu Arg
305                 310                 315                 320
Val Val Pro Leu Gln Tyr Gln Gly Arg Ser Leu Phe Leu Ser Gly Thr
                325                 330                 335
Ala Ala Leu Val Gln Gln Ala Leu Thr Leu Ile Arg Glu Leu Glu Glu
            340                 345                 350
Gly Ile Glu Asn Pro Thr Asp Lys Thr Val Phe Trp Tyr Asn Val Lys
        355                 360                 365
His Ser Asp Pro Gln Glu Leu Ala Ala Leu Leu Ser Gln Val His Asp
    370                 375                 380
Val Phe Ser Gly Glu Asn Lys Ala Ser Val Gly Ala Ala Asp Gly Cys
385                 390                 395                 400
Gly Ser Gln Leu Asn Ala Ser Ile Gln Ile Asp Thr Thr Val Ser Ser
                405                 410                 415
Ser Ala Lys Asp Gly Ser Val Lys Tyr Gly Asn Phe Ile Ala Asp Ser
            420                 425                 430
Lys Thr Gly Thr Leu Ile Met Val Val Glu Lys Glu Val Leu Pro Arg
            435                 440                 445
Ile Gln Met Leu Leu Lys Lys Leu Asp Val Pro Lys Lys Met Val Arg
    450                 455                 460
Ile Glu Val Leu Leu Phe Glu Arg Lys Leu Ala His Glu Gln Lys Ser
465                 470                 475                 480
Gly Leu Asn Leu Leu Arg Leu Gly Glu Glu Val Cys Lys Lys Gly Cys
                485                 490                 495
Ser Pro Ser Val Ser Trp Ala Gly Gly Thr Gly Ile Leu Glu Phe Leu
            500                 505                 510
Phe Lys Gly Ser Thr Gly Ser Ser Ile Val Pro Gly Tyr Asp Leu Ala
        515                 520                 525
Tyr Gln Phe Leu Met Ala Gln Glu Asp Val Arg Ile Asn Ala Ser Pro
    530                 535                 540
Ser Val Val Thr Met Asn Gln Thr Pro Ala Arg Ile Ala Val Val Asp
545                 550                 555                 560
Glu Met Ser Ile Ala Val Ser Ser Asp Lys Asp Lys Ala Gln Tyr Asn
                565                 570                 575
Arg Ala Gln Tyr Gly Ile Met Ile Lys Met Leu Pro Val Ile Asn Val
            580                 585                 590
Gly Glu Glu Asp Gly Lys Ser Tyr Ile Thr Leu Glu Thr Asp Ile Thr
        595                 600                 605
Phe Asp Thr Thr Gly Lys Asn His Asp Asp Arg Pro Asp Val Thr Arg
    610                 615                 620
Arg Asn Ile Thr Asn Lys Val Arg Ile Ala Asp Gly Glu Thr Val Ile
625                 630                 635                 640
Ile Gly Gly Leu Arg Cys Lys Gln Met Ser Asp Ser His Asp Gly Ile
                645                 650                 655
Pro Phe Leu Gly Asp Ile Pro Gly Ile Gly Lys Leu Phe Gly Met Ser
        660                 665                 670
Ser Thr Ser Asp Ser Leu Thr Glu Met Phe Val Phe Ile Thr Pro Lys
    675                 680                 685
Ile Leu Glu Asn Pro Val Glu Gln Gln Glu Arg Lys Glu Glu Ala Leu
    690                 695                 700
Leu Ser Ser Arg Pro Gly Glu Arg Glu Glu Tyr Tyr Gln Ala Leu Ala
705                 710                 715                 720
Ala Ser Glu Ala Ala Ala Arg Ala Ala His Lys Lys Leu Glu Met Phe
                725                 730                 735
Pro Ala Ser Gly Val Ser Leu Ser Gln Val Glu Arg Gln Glu Tyr Asp
        740                 745                 750
Gly Cys
```

<210> 818
<211> 501
<212> PRT
<213> Chlamydia pneumoniae

<400> 818

```
Arg Gly Lys Asn Thr Met Ala Ala Ser Ile Leu Ser Gln Glu Leu Leu
1               5                   10                  15
Asp Ile Leu Pro Tyr Thr Phe Leu Lys Lys His Cys Leu Leu Pro Ile
            20                  25                  30
Glu Glu Ser Ser Glu Ala Ile Thr Ile Ala His Ala Thr Ala Thr Ser
        35                  40                  45
Val Ile Ala Gln Asp Glu Val Lys Leu Leu Ile Lys Lys Pro Val Arg
    50                  55                  60
Phe Val Leu Lys Glu Glu Ser Glu Ile Leu Gln Arg Leu Gln Gln Leu
65                  70                  75                  80
Tyr Ser Asn Arg Glu Gly Asn Val Ser Asp Met Leu Leu Thr Met Lys
                85                  90                  95
Glu Glu Asp Gly Thr Thr Ile Ser Glu Glu Glu Asp Leu Leu Glu Thr
                100                 105                 110
Thr Asp Thr Ile Pro Val Val Arg Leu Leu Asn Trp Ile Leu Lys Glu
            115                 120                 125
Ala Ile Glu Glu Arg Ala Ser Asp Ile His Phe Glu Pro Cys Glu Asp
        130                 135                 140
Ser Met Arg Ile Arg Tyr Arg Ile Asp Gly Val Leu His Asp Arg His
145                 150                 155                 160
Ser Pro Pro Ser His Leu Arg Ser Ala Leu Thr Thr Arg Leu Lys Val
                165                 170                 175
Leu Ala Lys Met Asp Ile Ala Glu His Arg Leu Pro Gln Asp Gly Arg
            180                 185                 190
Ile Lys Ile His Ile Gly Gly Gln Glu Val Asp Met Arg Val Ser Thr
        195                 200                 205
Val Pro Val Ile Tyr Gly Glu Arg Val Val Leu Arg Ile Leu Asp Lys
    210                 215                 220
Arg Asn Val Ile Leu Asp Ile Ala Gly Leu His Met Pro Lys Gly Thr
225                 230                 235                 240
Glu Ile Leu Phe Lys Asp Thr Ile Thr Ala Pro Glu Gly Ile Leu Leu
                245                 250                 255
Val Thr Gly Pro Thr Gly Ser Gly Lys Thr Thr Thr Leu Tyr Ser Val
            260                 265                 270
Leu Gln Glu Leu Lys Gly Pro Leu Thr Asn Ile Met Thr Ile Glu Asp
        275                 280                 285
Pro Pro Glu Tyr Lys Leu Pro Gly Ile Ala Gln Ile Ala Val Lys Pro
    290                 295                 300
Lys Ile Gly Leu Thr Phe Ala Arg Gly Leu Arg His Leu Leu Arg Gln
305                 310                 315                 320
Asp Pro Asp Ile Leu Met Val Gly Glu Ile Arg Asp Gln Glu Thr Ala
                325                 330                 335
Glu Ile Ala Ile Gln Ala Ala Leu Thr Gly His Leu Val Val Ser Thr
            340                 345                 350
Leu His Thr Asn Asp Ala Ile Ser Ala Ile Pro Arg Leu Leu Asp Met
        355                 360                 365
Gly Ile Glu Ser Tyr Leu Leu Ser Ala Thr Leu Val Gly Val Val Ala
    370                 375                 380
Gln Arg Leu Val Arg Thr Ile Cys Pro Tyr Cys Lys Val Ala Tyr Thr
385                 390                 395                 400
Pro Glu Asn Gln Glu Lys Ser Phe Leu Ala Ser Leu Gly Lys Asp Thr
                405                 410                 415
Glu Met Pro Leu Tyr Arg Gly Gln Gly Cys Val His Cys Phe Arg Ser
            420                 425                 430
```

1036

```
Gly Tyr Lys Gly Arg Gln Gly Ile Tyr Glu Phe Leu Arg Pro Asn Thr
        435                     440                 445
Leu Phe Arg Ser Glu Val Ala Ser Asn Arg Pro Tyr His Ile Leu Arg
    450                 455                 460
Glu Thr Ala Glu Gln Asn Gly Phe Leu Pro Ile Leu Glu His Gly Ile
465                 470                     475                 480
Ala Leu Ala Val Ser Gly Glu Thr Thr Leu Ala Glu Val Leu Arg Val
                485                     490                 495
Thr Lys Arg Cys Asp
                500


        <210> 819
        <211> 394
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 819
Gly Gly Arg Met Pro Arg Tyr Arg Tyr Thr Tyr Leu Asp Pro Lys Glu
1               5                   10                  15
Arg Arg Lys Arg Gly Tyr Leu Glu Ala Leu His Ile Gln Glu Ala Arg
            20                  25                  30
Glu Lys Leu Ala Gln Glu Asn Ile Gln Val Leu Asp Ile Arg Glu Val
        35                  40                  45
Ala Leu Arg Arg Met Ser Ile Lys Ser Thr Glu Leu Ile Val Phe Thr
    50                  55                  60
Lys Gln Leu Leu Leu Leu Leu Arg Ser Gly Leu Pro Leu Tyr Glu Ser
65                  70                  75                      80
Leu Val Ser Leu Arg Asp Gln Tyr His Glu Gln Lys Met Gly Leu Leu
                85                  90                  95
Leu Thr Ser Phe Met Glu Thr Leu Arg Ser Gly Gly Ser Leu Ser Gln
            100                 105                 110
Ala Met Ala Ala His Pro Asn Ile Phe Asp His Phe Tyr Cys Ser Gly
        115                 120                 125
Val Ala Ala Gly Glu Ser Val Gly Asn Leu Glu Gly Cys Leu Gln Asn
    130                 135                 140
Ile Ile Val Val Leu Glu Glu Arg Ala Gln Ile Thr Lys Lys Met Val
145                 150                 155                 160
Gly Ala Leu Ser Tyr Pro Cys Val Leu Leu Val Phe Ser Phe Ala Val
                165                 170                 175
Met Leu Phe Phe Leu Leu Gly Val Ile Pro Ser Leu Lys Glu Thr Phe
            180                 185                 190
Glu Asn Met Glu Val Lys Gly Leu Thr Lys Ile Val Phe Gly Val Ser
        195                 200                 205
Asp Cys Leu Ser Ala Tyr Arg Tyr Leu Phe Leu Gly Phe Ala Ser Ala
    210                 215                 220
Leu Ile Thr Val Gly Ile Leu Met Arg His Arg Ile Pro Trp Lys Lys
225                 230                 235                 240
Ile Leu Glu Lys Leu Leu Phe Ala Leu Pro Gly Thr Lys Lys Phe Val
                245                 250                 255
Val Lys Val Ala Val Asn Arg Phe Cys Ser Val Ala Ser Ala Ile Leu
            260                 265                 270
Lys Gly Gly Gly Thr Leu Ile Glu Gly Leu Asp Leu Gly Cys Asp Ala
        275                 280                 285
Ile Pro Tyr Asp Arg Leu Lys Thr Asp Met Arg Asp Ile Val Gln Ala
    290                 295                 300
Val Ile Gly Gly Gly Ser Leu Ser Gln Glu Leu Ala Gln Arg Ser Trp
305                 310                 315                 320
Val Pro Lys Leu Ala Ile Gly Met Ile Ala Leu Gly Glu Glu Ser Gly
                325                 330                 335
Asp Leu Ala Asp Val Leu Gly Tyr Val Ala His Ile Tyr Asn Glu Asp
            340                 345                 350
```

1037

Thr Gln Lys Thr Leu Ala Ser Ile Thr Ser Trp Cys Gln Pro Val Ile
        355   360   365
Leu Ile Phe Leu Gly Gly Leu Ile Gly Val Ile Met Leu Ala Ile Leu
    370   375   380
Ile Pro Leu Thr Ser Asn Ile Gln Thr Leu
385   390

<210> 820
<211> 175
<212> PRT
<213> Chlamydia pneumoniae

<400> 820
Gly Tyr Thr Lys Asn Val Gly Phe Asp Asn Val Val Val Ser Thr Arg
1   5   10   15
Asp Ser Asp Phe Ser Trp Trp Pro Asp Arg Cys Asp His Val Gly Asn
            20   25   30
Ile Asp Pro Thr His Lys Gln Tyr Pro Asn Ile Ile Lys Cys Val Leu
        35   40   45
Arg Gly Val Gly Met Lys Arg Gln Lys Arg Lys Gln Ser Ile Thr Leu
    50   55   60
Ile Glu Met Met Val Val Ile Thr Leu Ile Gly Ile Ile Gly Gly Ala
65   70   75   80
Leu Ala Phe Asn Met Arg Gly Ser Ile His Lys Gly Lys Val Phe Gln
                85   90   95
Ser Glu Gln Asn Cys Ala Lys Val Tyr Asp Ile Leu Met Met Glu Tyr
            100   105   110
Ala Thr Gly Gly Ser Ser Leu Lys Glu Ile Ile Ala His Lys Glu Thr
        115   120   125
Val Val Glu Glu Ala Ser Trp Cys Lys Glu Gly Arg Lys Leu Leu Lys
    130   135   140
Asp Ala Trp Gly Glu Asp Leu Ile Val Gln Leu Asn Asp Lys Gly Asp
145   150   155   160
Asp Leu Val Ile Phe Ser Lys Arg Val Gln Ser Ser Asn Lys Lys
                165   170   175

<210> 821
<211> 54
<212> PRT
<213> Chlamydia pneumoniae

<400> 821
Ala Ser Leu Tyr Gly Tyr Cys Leu Phe Leu Ile Trp Glu Lys Phe His
1   5   10   15
Asn Asn Ile Gly Lys Ala Asn Phe His Leu Lys Ile Ile Thr Thr Asp
            20   25   30
Phe Leu Thr Asp Ile Tyr Ile Val Thr Ile Arg Asp Pro Ile Ala Tyr
        35   40   45
Pro Leu Thr Gly Ile Cys
        50

<210> 822
<211> 206
<212> PRT
<213> Chlamydia pneumoniae

<400> 822
Asp Glu Ser Leu Pro Cys Arg Cys Cys Cys Gly Thr Phe Pro Arg Ser
1   5   10   15
Glu Thr Ser Ser Ile Arg Thr Glu Met Pro Met Cys Asn Ser Ile Ala
            20   25   30

1038

```
Met Lys Lys Gln Lys Arg Gly Phe Val Leu Met Glu Leu Leu Met Ser
         35            40              45
Phe Thr Leu Ile Ala Leu Leu Leu Gly Thr Leu Gly Phe Trp Tyr Arg
     50            55              60
Lys Ile Tyr Thr Val Gln Lys Gln Lys Glu Arg Ile Tyr Asn Phe Tyr
65            70              75                  80
Ile Glu Glu Ser Arg Ala Tyr Lys Gln Leu Arg Thr Leu Phe Ser Met
             85              90                  95
Ser Leu Ser Ser Ser Tyr Glu Glu Pro Gly Ser Leu Phe Ser Leu Ile
             100            105                 110
Phe Asp Arg Gly Val Tyr Arg Asp Pro Lys Leu Ala Gly Ala Val Arg
         115            120            125
Ala Ser Leu His His Asp Thr Lys Asp Gln Arg Leu Glu Leu Arg Ile
         130            135            140
Cys Asn Ile Lys Asp Gln Ser Tyr Phe Glu Thr Gln Arg Leu Leu Ser
145            150            155                     160
His Val Thr His Val Val Leu Ser Phe Gln Arg Asn Pro Asp Pro Glu
             165            170            175
Lys Leu Pro Glu Thr Ile Ala Leu Thr Ile Thr Arg Glu Pro Lys Ala
             180            185            190
Tyr Pro Pro Arg Thr Leu Thr Tyr Gln Phe Ala Val Gly Lys
         195            200            205
```

        <210> 823
        <211> 344
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 823
```
His Thr Asn Leu Arg Leu Gly Asn Lys Pro Met Gln Pro Phe Ile Phe
1                5                10                  15
Thr Leu Leu Cys Leu Thr Ser Leu Val Ser Leu Val Ala Phe Asp Ala
             20              25                  30
Ala Asn Ala Arg Lys Arg Cys Ala Cys Ala Gln Thr Ile Glu Arg Gly
         35              40              45
Glu Asn Phe Phe Ser Ile Lys Arg Ser Ala Cys Ala Glu Ile Glu Tyr
     50              55              60
Gln Glu Lys Ser Arg His Ala Ser Ala Ile Glu Arg Ile Ser Lys Asp
65              70              75                  80
Lys Gly Lys Val Thr Pro Lys Gln Ile Ala Lys Val Ala Thr Lys Lys
             85              90                  95
Lys Gln Arg Tyr Arg Leu Leu Gln Val Pro Phe Ser Arg Pro Pro Asn
         100            105            110
Asn Ser Arg Tyr Asn Leu Tyr Ala Leu Leu Ser Glu Pro Pro Glu Cys
         115            120            125
Tyr Ser Asp Thr Ala Ser Trp Tyr Ala Ile Phe Ile Arg Leu Leu Arg
     130            135            140
Arg Ala Tyr Val Asp Thr Gly Asn Val Pro Pro Gly Ser Glu Tyr Ala
145            150            155                     160
Ile Ala Asn Ala Leu Ile Ser Asn Lys Gln Glu Ile Leu Glu Arg Gly
             165            170            175
Ala Gln Leu Gly Pro Asp Val Ile Glu Thr Leu Thr Leu Pro Glu Glu
             180            185            190
Gln Ala Glu Ile Phe Tyr Lys Met Leu Lys Gly Ser Ser Asn Ser Gln
         195            200            205
Ser Leu Leu Asn Phe Leu His Tyr Glu Glu Lys Ser Leu Gly His Cys
     210            215            220
Lys Leu Asn Leu Ile Phe Met Asp Pro Leu Leu Leu Glu Ala Val Leu
225            230            235                     240
Asp His Pro Asp Ala Tyr Arg Glu Thr Ser Leu Leu Arg Asp Gly Ile
             245            250            255
```

1039

Trp Glu Ala Val Lys Arg Gln Glu His Ala Ile Gln Glu His Gly Gln
                260   265   270
Ala Ala Ala Leu Glu Leu Phe Lys Thr Arg Thr Asp Phe Arg Leu Glu
        275   280   285
Leu Arg Asp Lys Met Gln Leu Leu Leu Ser Arg Tyr Asp Leu Leu Pro
    290   295   300
Leu Leu Asn Lys Lys Met Phe Asp Tyr Thr Leu Gly Ser Ala Gly Asp
305   310   315   320
Tyr Leu Phe Leu Val Asp Pro Asp Thr Lys Ala Ile Ser Arg Cys Arg
                325   330   335
Cys Pro Ser Lys Ser Ile Lys Leu
                340

        <210> 824
        <211> 177
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 824
Phe Phe Leu Ile Ile Val Leu Ile Ser Thr Ile Lys Asn Ile Ser Ile
1   5   10   15
Gly Arg Thr Met Ala Asp Glu Thr Pro Lys Glu Asn Ser Ser Lys Glu
        20   25   30
Ser Ser Ser Gln Phe Asp Ser Leu Lys Arg Lys Val Lys Asp Leu His
        35   40   45
Ser Asn Pro Lys Val Gly Lys Trp Lys Lys Phe Leu Ser His Arg Ala
    50   55   60
Cys Glu Ala Ile Gly Gly Cys Leu Val Leu Val Gly Ile Ile Ala Asp
65   70   75   80
Phe Ile Ser Trp Ala Gly Gly Leu Phe Ile Ala Cys Gly Val Val Leu
            85   90   95
Gly Phe His Val Glu Ile Arg Lys Met Leu Ser Asn Leu Gln Ser Tyr
            100   105   110
Ser Ile Ala Asn Gly Pro Ile Lys Asn Ala Ile Leu Cys Gly Leu Ile
        115   120   125
Leu Phe Phe Val Leu Asn Ile Pro Ser Phe Ala Val Ser Phe Ile Val
    130   135   140
Leu Cys Val Ile Leu Ser Phe Ile Thr Thr Ala Pro Ser Cys Ser Thr
145   150   155   160
Cys Ser Lys Asp His Cys Asp Lys His Gln Asp Thr Ser Asn Lys Pro
                165   170   175
Ser

        <210> 825
        <211> 308
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 825
Phe Tyr Ala Leu Gln Val Arg Phe Ser Lys Thr Ser Ile Asn Gly Asn
1   5   10   15
Lys Glu Leu Met Gly Ile Ser Leu Pro Glu Leu Phe Ser Asn Leu Gly
        20   25   30
Ser Ala Tyr Leu Asp Tyr Ile Phe Gln His Pro Pro Ala Tyr Val Trp
        35   40   45
Ser Val Phe Leu Leu Leu Leu Ala Arg Leu Leu Pro Ile Phe Ala Val
    50   55   60
Ala Pro Phe Leu Gly Ala Lys Leu Phe Pro Ser Pro Ile Lys Ile Gly
65   70   75   80

Ile Ser Leu Ser Trp Leu Ala Ile Ile Phe Pro Lys Val Leu Ala Asp
                85   90   95
Thr Gln Ile Thr Asn Tyr Met Asp Asn Asn Leu Phe Tyr Val Leu Leu
            100   105   110
Val Lys Glu Met Ile Ile Gly Ile Val Ile Gly Phe Val Leu Ala Phe
        115   120   125
Pro Phe Tyr Ala Ala Gln Ser Ala Gly Ser Phe Ile Thr Asn Gln Gln
    130   135   140
Gly Ile Gln Gly Leu Glu Gly Ala Thr Ser Leu Ile Ser Ile Glu Gln
145   150   155   160
Thr Ser Pro His Gly Ile Leu Tyr His Tyr Phe Val Thr Ile Ile Phe
                165   170   175
Trp Leu Val Gly Gly His Arg Ile Val Ile Ser Leu Leu Leu Gln Thr
            180   185   190
Leu Glu Val Ile Pro Ile His Ser Phe Phe Pro Ala Glu Met Met Ser
        195   200   205
Leu Ser Ala Pro Ile Trp Ile Thr Met Ile Lys Met Cys Gln Leu Cys
210   215   220
Leu Val Met Thr Ile Gln Leu Ser Ala Pro Ala Ala Leu Ala Met Leu
225   230   235   240
Met Ser Asp Leu Phe Leu Gly Ile Ile Asn Arg Met Ala Pro Gln Val
                245   250   255
Gln Val Ile Tyr Leu Leu Ser Ala Leu Lys Ala Phe Met Gly Leu Leu
            260   265   270
Phe Leu Thr Leu Ala Trp Trp Phe Ile Ile Lys Gln Ile Asp Tyr Phe
        275   280   285
Thr Leu Ala Trp Phe Lys Glu Val Pro Ile Met Leu Leu Gly Ser Asn
    290   295   300
Pro Gln Val Leu
305

        <210> 826
        <211> 100
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 826
Ile Arg Thr Arg Ala Val Leu Ala Phe Phe Ala Thr Ser Phe Lys Ser
1   5   10   15
Val Leu Phe Glu Tyr Ser Tyr Gln Ser Leu Leu Leu Ile Leu Ile Val
            20   25   30
Ser Ala Pro Pro Ile Ile Leu Ala Ser Ile Val Gly Ile Met Val Ala
        35   40   45
Ile Phe Gln Ala Ala Thr Gln Ile Gln Glu Gln Thr Phe Ala Phe Ala
    50   55   60
Val Lys Leu Val Val Ile Phe Gly Thr Leu Met Ile Ser Gly Gly Trp
65   70   75   80
Leu Ser Asn Met Ile Leu Arg Phe Ala Gly Gln Ile Phe Gln Asn Phe
                85   90   95
Tyr Lys Trp Lys
            100

        <210> 827
        <211> 314
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 827
Glu Arg Ile Lys Val Phe Thr Ile Met Arg Ser Ile Phe Arg Phe Ser
1   5   10   15

1041

Leu Cys Phe Phe Thr Leu Ser Val Ser Cys Cys Phe Ala Asp Ala Ser
                        20   25   30
Leu Tyr Glu Asn Ser Cys Pro Ser Arg Cys Gln Pro Thr Pro Pro Pro
            35   40   45
Ser Asn Ser Asn Pro Leu Asn Val Val Gln Gln Pro Val Ala Ala Ser
    50   55   60
Ser Val Pro Ser Tyr Met Pro Pro Leu Asn Ala Asp Asp Val Leu Pro
65   70   75   80
Arg Asp His Leu Ser Asp Gly Ser Phe Ser Asp Thr Tyr Pro Asp Ile
                85   90   95
Thr Thr Gln Ala Ile Ile Leu Ile Phe Leu Ala Leu Ser Pro Phe Leu
            100   105   110
Val Met Leu Leu Thr Ser Tyr Leu Lys Ile Ile Ile Thr Leu Val Leu
        115   120   125
Leu Arg Asn Ala Leu Gly Val Gln Gln Thr Pro Pro Ser Gln Val Leu
    130   135   140
Asn Gly Ile Ala Leu Ile Leu Ser Ile Tyr Val Met Phe Pro Thr Gly
145   150   155   160
Val Ala Met Tyr Lys Asp Ala Arg Lys Glu Ile Glu Ala Asn Thr Ile
                165   170   175
Pro Gln Ser Leu Phe Thr Ala Glu Gly Ala Glu Thr Val Phe Val Ala
            180   185   190
Leu Asn Lys Ser Lys Glu Pro Leu Arg Ser Phe Leu Ile Arg Asn Thr
        195   200   205
Pro Lys Ala Gln Ile Gln Ser Phe Tyr Lys Ile Ser Gln Lys Thr Phe
    210   215   220
Pro Ser Glu Ile Arg Ala His Leu Thr Ala Ser Asp Phe Val Ile Ile
225   230   235   240
Ile Pro Ala Phe Ile Met Gly Gln Ile Lys Asn Ala Phe Glu Ile Gly
            245   250   255
Val Leu Ile Tyr Leu Pro Phe Phe Val Ile Asp Leu Val Thr Ala Asn
        260   265   270
Val Leu Val Ala Met Gln Met Met Met Leu Ser Pro Leu Ser Ile Ser
    275   280   285
Leu Pro Leu Lys Leu Leu Leu Ile Val Met Val Asp Gly Trp Thr Leu
    290   295   300
Leu Leu Gln Gly Leu Met Ile Ser Phe Lys
305   310

<210> 828
<211> 257
<212> PRT
<213> Chlamydia pneumoniae

<400> 828
His Asp Asn Lys Arg Ser Gly Val Phe Ser Ser Glu Val Asn Gln Pro
1   5   10   15
Gln Arg Tyr Tyr Ala Ile Val Lys Met Lys Phe Phe Ser Leu Ile Phe
        20   25   30
Lys Asp Asp Asp Val Ser Pro Asn Lys Lys Val Leu Ser Pro Glu Ala
    35   40   45
Phe Ser Ala Phe Leu Asp Ala Lys Glu Leu Leu Glu Lys Thr Lys Ala
    50   55   60
Asp Ser Glu Ala Tyr Val Ala Glu Thr Glu Gln Lys Cys Ala Gln Ile
65   70   75   80
Arg Gln Glu Ala Lys Asp Gln Gly Phe Lys Glu Gly Ser Glu Ser Trp
                85   90   95
Ser Lys Gln Ile Ala Phe Leu Glu Glu Glu Thr Lys Asn Leu Arg Ile
            100   105   110
Arg Val Arg Glu Ala Leu Val Pro Leu Ala Ile Ala Ser Val Arg Lys
        115   120   125

1042

Ile Ile Gly Lys Glu Leu Glu Leu His Pro Glu Thr Ile Val Ser Ile
    130   135   140
Ile Ser Gln Ala Leu Lys Glu Leu Thr Gln Asn Lys His Ile Ile Ile
145   150   155   160
Ser Val Asn Pro Lys Asp Leu Pro Leu Val Glu Lys Ser Arg Pro Glu
                165   170   175
Leu Lys Asn Ile Val Glu Tyr Ala Asp Ser Leu Ile Leu Thr Ala Lys
                180   185   190
Pro Asp Val Thr Pro Gly Gly Cys Ile Ile Glu Thr Glu Ala Gly Ile
            195   200   205
Ile Asn Ala Gln Leu Asp Val Gln Leu Asp Ala Leu Glu Lys Ala Phe
    210   215   220
Ser Thr Ile Leu Lys Ala Lys Asn Pro Val Asp Glu Pro Ser Glu Thr
225   230   235   240
Ser Ser Ser Thr Asp Ser Ser Ser Leu Ser Asn Asp Gln Asp Lys Lys
                245   250   255
Glu

        <210> 829
        <211> 280
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 829
Gly Cys Leu Val Thr Ala Asn Thr Phe Gly Thr Leu Asp Ile Leu Met
1   5   10   15
Lys His Ser Lys Glu Asp Asp Leu Ser Arg Phe Leu Pro Lys Asn Leu
            20   25   30
Leu Val Glu Ser Pro His Pro Glu Glu Ile Pro Leu Lys Ser Leu Ser
        35   40   45
Phe Thr Met Ser Trp Leu Pro Thr Ile His Pro Ser Trp Ile Thr Ile
    50   55   60
Ala Met Lys Glu Phe Pro Pro Glu Ile Gln Gly Gln Leu Leu Ala Trp
65   70   75   80
Leu Pro Glu Pro Leu Val Gln Glu Ile Leu Pro Leu Leu Pro Gly Ile
                85   90   95
Ser Ile Ala Pro His Arg Cys Ala Pro Phe Gly Ala Phe Tyr Leu Leu
            100   105   110
Asp Met Leu Ser Lys Lys Ile Arg Pro Cys Gly Ile Thr Glu Glu Ile
        115   120   125
Phe Leu Pro Ala Ser Ser Ala Asn Ala Ile Leu Tyr Tyr Thr Gly Pro
    130   135   140
Val Lys Ile Ala Leu Ile Asn Cys Leu Gly Leu Tyr Ser Ile Ala Lys
145   150   155   160
Glu Leu Lys His Ile Leu Asp Lys Val Val Ile Glu Arg Val Lys Asn
                165   170   175
Ala Leu Ser Pro Thr Glu Lys Leu Phe Leu Thr Tyr Cys Gln Ser His
            180   185   190
Pro Met Lys His Leu Glu Thr Thr Asn Phe Leu Ser Ser Trp Thr Thr
        195   200   205
Asp Ala Glu Leu Arg Gln Phe Val His Lys Gln Gly Leu Glu Phe Leu
    210   215   220
Gly Lys Ala Leu Thr Lys Glu Asn Ala Ser Phe Leu Trp Tyr Phe Leu
225   230   235   240
Arg Arg Leu Asp Val Gly Arg Ala Tyr Ile Val Glu Gln Thr Leu Lys
                245   250   255
Thr Trp Tyr Asp His Pro Tyr Val Asp Tyr Phe Lys Ser Arg Leu Glu
            260   265   270
Gln Cys Met Lys Val Leu Val Lys
    275   280

<210> 830
<211> 342
<212> PRT
<213> Chlamydia pneumoniae

<400> 830
Ile Lys Arg Tyr Ala Trp Ile Met Val Arg Arg Ser Ile Ser Phe Cys
1   5   10   15
Leu Phe Phe Leu Met Thr Leu Leu Cys Cys Thr Ser Cys Asn Ser Arg
            20   25   30
Ser Leu Ile Val His Gly Leu Pro Gly Arg Glu Ala Asn Glu Ile Val
        35   40   45
Val Leu Leu Val Ser Lys Gly Val Ala Ala Gln Lys Leu Pro Gln Ala
    50   55   60
Ala Ala Ala Thr Ala Gly Ala Ala Thr Glu Gln Met Trp Asp Ile Ala
65   70   75   80
Val Pro Ser Ala Gln Ile Thr Glu Ala Leu Ala Ile Leu Asn Gln Ala
                85   90   95
Gly Leu Pro Arg Met Lys Gly Thr Ser Leu Leu Asp Leu Phe Ala Lys
            100   105   110
Gln Gly Leu Val Pro Ser Glu Leu Gln Glu Lys Ile Arg Tyr Gln Glu
        115   120   125
Gly Leu Ser Glu Gln Met Ala Ser Thr Ile Arg Lys Met Asp Gly Val
    130   135   140
Val Asp Ala Ser Val Gln Ile Ser Phe Thr Thr Glu Asn Glu Asp Asn
145   150   155   160
Leu Pro Leu Thr Ala Ser Val Tyr Ile Lys His Arg Gly Val Leu Asp
                165   170   175
Asn Pro Asn Ser Ile Met Val Ser Lys Ile Lys Arg Leu Ile Ala Ser
            180   185   190
Ala Val Pro Gly Leu Val Pro Glu Asn Val Ser Val Val Ser Asp Arg
        195   200   205
Ala Ala Tyr Ser Asp Ile Thr Ile Asn Gly Pro Trp Gly Leu Thr Glu
    210   215   220
Glu Ile Asp Tyr Val Ser Val Trp Gly Ile Ile Leu Ala Lys Ser Ser
225   230   235   240
Leu Thr Lys Phe Arg Leu Ile Phe Tyr Val Leu Ile Leu Ile Leu Phe
                245   250   255
Val Ile Ser Cys Gly Leu Leu Trp Val Ile Trp Lys Thr His Thr Leu
            260   265   270
Ile Met Thr Met Gly Gly Thr Lys Gly Phe Phe Asn Pro Thr Pro Tyr
        275   280   285
Thr Lys Asn Ala Leu Glu Ala Lys Lys Ala Glu Gly Ala Ala Ala Asp
    290   295   300
Lys Glu Lys Lys Glu Asp Ala Asp Ser Gln Gly Glu Ser Lys Asn Ala
305   310   315   320
Glu Thr Ser Asp Lys Asp Ser Ser Asp Lys Asp Ala Pro Glu Gly Ser
                325   330   335
Asn Glu Ile Glu Gly Ala
            340

<210> 831
<211> 190
<212> PRT
<213> Chlamydia pneumoniae

<400> 831
Lys Tyr Ile Cys Phe Val Pro Thr Leu Ala Lys Ser Phe Tyr Ile Asn
1   5   10   15
Ile Arg Asp Ser Arg Phe Tyr Ser Trp Leu Cys Phe Ile Met Lys Glu
            20   25   30

1044

```
Thr Tyr Tyr Arg Asp Phe Leu His Glu Asn Tyr Leu Lys Asn Lys Lys
         35                  40                  45
Ser Met Phe Met Lys Ile Tyr Lys Thr Ala Gly Glu Phe Phe Leu Ala
 50                  55                  60
Asn Ala Lys Trp Pro Leu Val Pro Ala Gly Tyr Arg Arg Val Arg Gly
 65                  70                  75                  80
Lys Asp Phe Val Leu Ser Pro Leu Val Asp Leu Val Ile Leu Phe Pro
             85                  90                  95
Trp Val Thr Lys Asp Ser Arg Tyr Ser Pro Cys Ser Met Thr Phe Thr
            100                 105                 110
Cys Ile Cys Arg Ser Ile Val Glu Cys Ile Pro Val Val Ser Thr Leu
            115                 120                 125
Phe Gly Ile Gly Arg Phe Cys Ala Val Trp Cys Val Glu Gly Phe Ser
        130                 135                 140
Gly Ser Thr Phe Asp Lys Ile Tyr His Thr Ile Val Ala Val Leu Gly
145                 150                 155                 160
Ile Leu Gly Leu Gly Ile Leu Thr Phe Ile Leu Arg Ile Ile Phe Ser
                165                 170                 175
Val Leu Met Leu Pro Val Trp Phe Leu Phe Lys Cys Tyr Ser
            180                 185                 190
```

        <210> 832
        <211> 207
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 832
```
Asp Ser Cys Ser Phe Leu Leu Pro Cys Phe Glu Val Glu Ala Gln Thr
  1               5                  10                  15
Phe Pro Gln Val Phe Ser Lys Val Val Val Tyr Lys Tyr Lys Ser Ser
            20                  25                  30
Arg Ile Leu Leu Ile Ala Leu Leu Tyr Asn Ile Thr Leu Val Leu Gly
        35                  40                  45
Leu Ile Phe Ile His Lys Lys Tyr Leu Gly Gln Lys Gly Arg Val Ile
    50                  55                  60
Leu Lys Ile Tyr Gln Asn Glu Glu Glu Phe Phe Arg Ala Thr Glu Arg
 65                  70                  75                  80
Phe Pro Ser Ile Gly Ala Gly Tyr Leu Arg Val Arg Asn Lys Asn Ser
                85                  90                  95
Val Leu Phe Pro Phe Glu Asp Leu Met Leu Val Cys Pro Ser Val Pro
            100                 105                 110
Lys Asp Phe Pro Leu Ser Ala Phe Lys Val Thr Thr Lys Leu Ile Tyr
        115                 120                 125
Trp Ser Val Leu Glu Ser Ile Pro Val Val Gly Ala Phe Phe Phe Ser
        130                 135                 140
Ile Gly Arg Leu Phe Ala Met Trp Cys Ile Glu Asp Phe Pro Gly Ser
145                 150                 155                 160
Ile Phe Ser Arg Ile Tyr His Thr Ile Val Gly Val Leu Gly Ile Leu
                165                 170                 175
Gly Leu Gly Ile Ile Met Phe Ile Leu Arg Ile Ile Phe Thr Leu Leu
            180                 185                 190
Thr Leu Pro Phe Trp Leu Ile Ser Cys Leu Lys Ser Ser Ala Ala
        195                 200                 205
```

        <210> 833
        <211> 62
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 833

Asn Lys Arg Lys Asn Asn Val Leu Ile Arg Lys Ser Glu Ser Glu Gly
1   5   10   15
Ala Phe Phe Glu Ala Thr Gln Asn Tyr Pro Thr Ile Gln Gln Gly Tyr
        20   25   30
Gln Leu Val Arg Ile Arg Glu His Asn Leu Ser Val Arg Ala His Phe
    35   40   45
Asp Leu Ser Leu Ser Leu Asp Ala Ser Val His Pro Ala Ala
    50   55   60

<210> 834
<211> 308
<212> PRT
<213> Chlamydia pneumoniae

<400> 834

Val Met Lys Cys Arg Pro Thr Leu Asn Thr Asp Gln Pro Arg Val Arg
1   5   10   15
Lys Lys Leu Pro Glu Arg Phe Pro Lys Trp Leu Gln Arg Pro Leu Pro
        20   25   30
Gln Gly Ser Ala Phe His Ala Thr Asp Ala Thr Ile Lys Arg Ser Gly
        35   40   45
Met Pro Thr Val Cys Glu Glu Ala Leu Cys Pro Asn Arg Ala Glu Cys
        50   55   60
Trp Ser Arg Lys Thr Ala Thr Tyr Leu Ala Leu Gly Asp Val Cys Thr
65   70   75   80
Arg Ser Cys Gly Phe Cys Asn Ile Gly His Ser Lys Thr Pro Pro Ala
                85   90   95
Leu Asp Pro Thr Glu Pro Glu Arg Ile Ala Leu Ser Ala Lys Glu Leu
            100   105   110
Gly Leu Lys His Val Val Ile Thr Met Val Ala Arg Asp Asp Leu Glu
        115   120   125
Asp Gly Gly Ala Gln Gly Leu Val Asp Ile Ile Gln Lys Leu Arg Glu
        130   135   140
Glu Leu Pro Gln Ala Thr Thr Glu Val Leu Ala Ser Asp Phe Gln Gly
145   150   155   160
Asn Val Ser Ala Leu His Thr Leu Leu Asp Ser Gly Ile Thr Ile Tyr
                165   170   175
Asn His Asn Val Glu Thr Val Ala Arg Leu Ser Pro Leu Val Arg His
            180   185   190
Lys Ala Thr Tyr Ala Arg Ser Met Phe Met Leu Glu Gln Ala Ala Asn
        195   200   205
Tyr Leu Pro Asp Leu Lys Ile Lys Ser Gly Ile Met Val Gly Leu Gly
    210   215   220
Glu Met Glu Gly Glu Val Lys Gln Thr Leu Gln Asp Leu Ala Ser Ile
225   230   235   240
Gly Val Arg Ile Val Thr Ile Gly Gln Tyr Leu Arg Pro Ser Arg Lys
                245   250   255
His Leu Gln Val Lys Ser Tyr Val Thr Pro Glu Thr Phe Asp Tyr Tyr
            260   265   270
Arg Arg Val Gly Glu Ala Met Gly Leu Phe Val Tyr Ala Gly Pro Phe
        275   280   285
Val Arg Ser Ser Phe Asn Ala Asp Met Ile Leu Ala Ser Val Gln Asp
290   295   300
Lys Ala Ser Ala
305

<210> 835
<211> 475
<212> PRT
<213> Chlamydia pneumoniae

<400> 835

Arg Gly Val Leu Phe Glu Ile Leu Ile Thr Val Ser Glu Asn Met Thr
1 5 10 15

Gln Glu Phe Asp Cys Val Val Ile Gly Ala Gly Pro Ser Gly Tyr Val
20 25 30

Ala Ala Ile Thr Ala Ala Gln Ser Lys Leu Arg Thr Ala Leu Ile Glu
35 40 45

Glu Asp Gln Ala Gly Gly Thr Cys Leu Asn Arg Gly Cys Ile Pro Ser
50 55 60

Lys Ala Leu Ile Ala Gly Ala Asn Val Val Ser His Ile Lys His Ala
65 70 75 80

Glu Gln Phe Gly Ile His Val Asp Gly Tyr Thr Ile Asp Tyr Pro Ala
85 90 95

Met Ala Lys Arg Lys Asn Thr Val Val Gln Gly Ile Arg Gln Gly Leu
100 105 110

Glu Gly Leu Ile Arg Ser Asn Lys Ile Thr Val Leu Lys Gly Thr Gly
115 120 125

Ser Leu Val Ser Ser Thr Glu Val Lys Val Ile Gly Gln Asp Thr Thr
130 135 140

Ile Ile Lys Ala Asn His Ile Ile Leu Ala Thr Gly Ser Glu Pro Arg
145 150 155 160

Pro Phe Pro Gly Val Pro Phe Ser Ser Arg Ile Leu Ser Ser Thr Gly
165 170 175

Ile Leu Glu Leu Glu Val Leu Pro Lys Lys Leu Ala Ile Ile Gly Gly
180 185 190

Gly Val Ile Gly Cys Glu Phe Ala Ser Leu Phe His Thr Leu Gly Val
195 200 205

Glu Ile Thr Val Ile Glu Ala Leu Asp His Ile Leu Ala Val Asn Asn
210 215 220

Lys Glu Val Ser Gln Thr Val Thr Asn Lys Phe Thr Lys Gln Gly Ile
225 230 235 240

Arg Ile Leu Thr Lys Ala Ser Ile Ser Ala Ile Glu Glu Ser Gln Asn
245 250 255

Gln Val Arg Ile Thr Val Asn Asp Gln Val Glu Glu Phe Asp Tyr Val
260 265 270

Leu Val Ala Ile Gly Arg Gln Phe Asn Thr Ala Ser Ile Gly Leu Asp
275 280 285

Asn Ala Gly Val Ile Arg Asp Asp Arg Gly Val Ile Pro Val Asp Glu
290 295 300

Thr Met Arg Thr Asn Val Pro Asn Ile Tyr Ala Ile Gly Asp Ile Thr
305 310 315 320

Gly Lys Trp Leu Leu Ala His Val Ala Ser His Gln Gly Val Ile Ala
325 330 335

Ala Lys Asn Ile Ser Gly His His Glu Val Met Asp Tyr Ser Ala Ile
340 345 350

Pro Ser Val Ile Phe Thr His Pro Glu Ile Ala Met Val Gly Leu Ser
355 360 365

Leu Gln Glu Ala Glu Gln Gln Asn Leu Pro Ala Lys Leu Thr Lys Phe
370 375 380

Pro Phe Lys Ala Ile Gly Lys Ala Val Ala Leu Gly Ala Ser Asp Gly
385 390 395 400

Phe Ala Ala Ile Val Ser His Glu Ile Thr Gln Gln Ile Leu Gly Ala
405 410 415

Tyr Val Ile Gly Pro His Ala Ser Ser Leu Ile Gly Glu Met Thr Leu
420 425 430

Ala Ile Arg Asn Glu Leu Thr Leu Pro Cys Ile Tyr Glu Thr Val His
435 440 445

Ala His Pro Thr Leu Ser Glu Val Trp Ala Glu Gly Ala Leu Leu Ala
450 455 460

```
Thr Asn His Pro Leu His Phe Pro Pro Lys Ser
465             470               475
```

```
<210> 836
<211> 157
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 836
Lys Ile Pro Met Pro Phe Ala Lys Glu Thr Glu Met Gln Arg Thr Cys
1               5                 10                15
Trp Lys Cys Glu Gly Ser Val Ser Met His Val Pro Gln Cys Pro Tyr
            20                25                30
Cys Ser Ala Phe Leu Gln Asp Pro Pro Val Ala Ser Gly Gly Phe Ser
        35                40                45
Ser Cys His Ile Ser Phe Pro Glu Gly Ala Ser Lys Glu Glu Ala Glu
    50                55                60
Asp Leu Phe Ala Val Ser Ser Glu Asp Trp Glu Ala Val Leu Gly Asp
65                70                75                80
Gln Asn Pro Thr Gln Glu Thr Asn Lys Gln Val Ile Pro Glu Trp Thr
            85                90                95
Trp Leu Gln Ser Trp Pro Leu Ala Ala Leu Phe Leu Gly Ile Gly Leu
            100               105               110
Leu Ala Phe Ala Phe Leu Ile Leu Leu Phe Ser Thr Asp Ser Gly Leu
        115               120               125
Val Leu Thr Trp Pro Lys Asn Arg Ala Tyr Phe Tyr Gly Ile Ile Gly
    130               135               140
Ala Ala Val Ala Tyr Arg Gly Tyr Arg Lys Leu Pro Leu
145               150               155
```

```
<210> 837
<211> 1218
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 837
His Asn Ile Met Val Leu Glu Ala Leu Ala Ile Phe Arg Gln Asp Ala
1               5                 10                15
Met Gln His Leu Leu Lys His Arg Lys Glu Ile Val Val Asp Phe Cys
            20                25                30
Glu Asp Ser Tyr Thr Ile Arg Ile Pro Asp Glu Glu Ala Pro Glu Gly
        35                40                45
Tyr Trp Leu Ser Thr Leu Lys Leu Gln Asp Ile Asp Arg Leu Thr Phe
    50                55                60
Ala Ser Cys Ser Cys Pro Asp Gly Glu Cys Cys Leu His Leu Met Thr
65                70                75                80
Ala Tyr Phe Ala Val Tyr Asp Ala Leu Gly Leu His Pro Leu His Asp
            85                90                95
Lys Phe Arg His Ser Phe Trp Tyr Ala Val Phe Ser His Phe Phe Leu
            100               105               110
Asp Ser Ile Pro Leu Gln Ala Gln Gly Glu Met Val Tyr Thr Leu Glu
        115               120               125
Ser Pro His Ile Thr Leu Thr Ile Glu Cys Leu Ser Glu Glu Val Phe
    130               135               140
Gln Asp Trp Leu Arg Thr Ile His Ala Ser Glu Glu Pro Thr Val Phe
145               150               155               160
Thr Asn Lys Thr Phe Leu Lys Ser Ala Leu Tyr Arg Thr Ala Lys Lys
            165               170               175
Phe Phe Phe Leu Asn Glu Glu Gly Ala Glu Leu Thr Ile Gly Glu Asn
        180               185               190
```

Ser Gln Gly Phe Pro Ser His Phe Ser Leu Gln Trp Gln Gly Leu Val
195   200   205

Phe Lys Ala Glu Ile Leu Asp Phe Pro Thr Leu Glu Asp Ile Phe Pro
210   215   220

Lys Leu Glu Leu Ala His Thr Ser Leu Glu Asn Val Ser His Asp Ile
225   230   235   240

Ser Ile Thr Asn Val Thr Val Cys Ala Glu Glu Ala Lys Val Asn Phe
245   250   255

Thr Leu Ser Pro Val Ile His Lys Lys Asp Arg Glu Asn His Pro Lys
260   265   270

Thr Arg Ile Gly Ser Val Glu Tyr Val Ala Lys Thr His Glu Met Ile
275   280   285

Thr Gly Pro Lys Ala Ile Ala Leu Pro Ile Tyr Ala Ile Pro Leu Leu
290   295   300

Ala Asp Lys Phe Lys Asp Gln Leu Leu Ser Leu Leu Cys Tyr Asp Ser
305   310   315   320

Leu Glu Tyr Arg Leu Arg Tyr Asp Ile Arg Leu Leu Arg Asp Ala Ser
325   330   335

Phe Ser Phe Ser Ala Tyr Leu Val Thr Pro Gly Asp Leu Asp Asn Gly
340   345   350

Ser Leu Ile Tyr Pro Asn Tyr Cys Tyr Ser Pro Thr Lys Gly Leu Met
355   360   365

Gln Val Val Gly Met Leu Ser Pro Lys Gln Ala Phe Ile Val Lys Ser
370   375   380

Glu Gln Val Glu Asp Phe Leu Asn Glu Arg Gly His Leu Ile Gln Glu
385   390   395   400

Pro Gly Phe Gln Thr Phe Ile Asn Glu Arg Pro Glu Gly His Leu Thr
405   410   415

Tyr Asn Val Thr Glu Gln Gly Val Leu Leu Phe His Tyr Asp Val Gly
420   425   430

Asp Pro Ser Ser Thr Glu Ile Arg Phe Gly Thr Trp Thr Tyr Tyr Thr
435   440   445

Asn Gln Gly Phe Phe Leu Glu Lys Lys Asn Asp Leu Pro Ile Gln Asp
450   455   460

Gly Leu Ile Val Glu Pro Gln Asp Ile Pro Ala Phe Ile Val Lys Asn
465   470   475   480

Asp Ala Ala Leu Arg Arg Leu Pro Asn Phe Phe Ser Ser Pro Pro Asn
485   490   495

Leu Lys Asp Leu Leu Ile Glu Val His Arg Gln Ser Arg Gly Lys Gly
500   505   510

Leu Asp Leu Lys Pro Ile Leu Val Gly Leu Gly Glu Ser Arg Cys Trp
515   520   525

Leu Phe Gly Val Phe Leu Tyr Arg Glu Asp Ile Gly Phe Ser Leu Ile
530   535   540

Pro Thr Pro Leu Gln Gly Leu Cys Phe Leu Pro Arg Val Ile Pro Pro
545   550   555   560

Glu Asn Val Pro Gln Phe Leu Thr Gln Tyr Ala Gln His Glu Arg Ile
565   570   575

Leu Phe Pro Asn Pro Gln Thr Arg Pro Pro Glu Ser Tyr Glu Leu Val
580   585   590

Ile Gln Ser Ile His Arg Pro His Pro Ala Ser Pro Leu His Leu Gln
595   600   605

Leu Glu Leu Lys Thr Asn Leu Gly Ser Val Pro Ile Gly Ile Ala Leu
610   615   620

Gln Gly Leu Lys Ser Lys His Thr Phe Leu Phe Thr Gln Ala Gly Phe
625   630   635   640

Leu Asp Leu Lys Gln Asn Leu Phe Gln Phe Leu Lys Gln Phe Leu Ser
645   650   655

Thr Gln Lys Cys Val Ile Ala Glu Asn Thr Val Ile Ala Asn Ile Thr
660   665   670

Asp Val Phe Lys Leu Asp Ala Leu Ala Pro Leu Ser Val Thr Asp Asp
                675   680   685
Thr Ile Ala Asn Pro Glu Asp Leu Gln Phe Phe Ser Gln Leu Lys Ala
                690   695   700
Ala Cys Leu Pro Pro Ile Pro Gln Asn Leu Phe Ser Ser Asp His Gln
705   710   715   720
Leu Arg Pro Tyr Gln Asn Ser Gly Leu Leu Trp Met Trp Phe Leu Tyr
                725   730   735
Asn His Arg Leu Ser Gly Leu Leu Cys Asp Glu Met Gly Leu Gly Lys
                740   745   750
Thr His Gln Ala Thr Ala Leu Leu Asp Ile Val Phe Gln Ser Ser Gln
                755   760   765
Pro Ser Ala Arg Pro Lys Phe Leu Ile Val Cys Pro Thr Ser Val Leu
770   775   780
Pro His Trp Glu His Ile Leu Ser Asn His Leu Pro Gly Val Ser Ile
785   790   795   800
Phe Ser Phe His Gly Pro Asn Lys Pro Ser Glu Leu Pro Pro Ala Asp
                805   810   815
Ile Leu Leu Thr Ser Tyr Gly Thr Leu Arg Gln Asn Tyr Asp Lys Phe
                820   825   830
Tyr Lys Ile Ala Phe Thr Ile Val Val Phe Asp Glu Ile His Met Ala
                835   840   845
Lys Asn Lys Ser Ser Gln Ile His Lys Ile Leu Cys Arg Ile Asp Ala
850   855   860
Gln Met Lys Leu Gly Leu Thr Gly Thr Pro Ile Glu Asn Asn Leu Leu
865   870   875   880
Glu Phe Lys Gly Leu Leu Asp Ile Ile Leu Pro Asn Tyr Leu Pro Ser
                885   890   895
Asp Ala Leu Phe Lys Lys Leu Phe Thr Lys Arg Cys Ser Ser Glu Glu
                900   905   910
Leu Glu Glu Ile Ile Pro Ser Gln Asp Leu Leu Leu Lys Leu Thr Arg
                915   920   925
Pro Phe Ile Leu Arg Arg Thr Lys Lys Leu Val Leu Pro Glu Leu Pro
                930   935   940
Asp Lys Val Glu Ser Ile Ile Ala Cys Ser Leu Ser Pro Asp Gln Glu
945   950   955   960
Lys Leu Tyr Met Ala Thr Leu Gln Arg Glu Lys Ser His Ile Gln Lys
                965   970   975
Leu Glu Thr Pro Glu Glu Pro Ala Thr Asn Phe Leu His Ile Phe Ala
                980   985   990
Leu Leu Asn His Leu Lys Gln Ile Cys Asp His Pro Ala Val Phe Phe
                995   1000   1005
Lys Asp Pro Asp Gln Tyr Lys Asn Tyr Glu Ser Gly Lys Trp Asn Ala
                1010   1015   1020
Phe Val Lys Leu Leu Lys Glu Ser Leu Asn Ala Gly Tyr Lys Val Val
1025   1030   1035   1040
Val Phe Ser Gln Tyr Ile His Met Ile Arg Ile Ile Thr Leu Tyr Leu
                1045   1050   1055
Glu Glu Ile Gly Ile Lys Tyr Ala Ser Ile Gln Gly Lys Ser Leu Asn
                1060   1065   1070
Arg Lys Glu Glu Ile Glu Thr Phe Thr Thr Asp Pro Asn Cys Gln Val
                1075   1080   1085
Phe Val Gly Ser Leu Leu Ala Ala Gly Thr Gly Ile Asn Leu Thr Ala
                1090   1095   1100
Gly Asn Val Val Ile Met Tyr Asp Arg Trp Trp Asn Pro Ala Lys Glu
1105   1110   1115   1120
Asn Gln Ala Leu Asp Arg Val His Arg Ile Gly Gln Lys Asn Thr Val
                1125   1130   1135
Phe Ile Tyr Lys Leu Ile Thr Glu Asp Thr Leu Glu Glu Arg Ile His
                1140   1145   1150

Tyr Leu Ile Glu Lys Lys Ile Arg Leu Leu Asp Lys Val Ile Ala Ser
     1155   1160   1165
Gln Asp Ser Asn Ile Leu His Met Leu Asn Arg Glu Asp Leu Leu Thr
     1170   1175   1180
Ile Leu Ser Tyr Lys Asp Glu His Gly Thr Ser Asp Ser Glu Glu Ser
1185   1190   1195   1200
Pro Val Asp Ala Pro Val Glu Asp Asp Thr Gly Val Leu Pro Pro Glu
                1205   1210   1215

Asp Ser

<210> 838
<211> 413
<212> PRT
<213> Chlamydia pneumoniae

- -

<400> 838
Lys Met Lys Lys Asn Ala Ser His Lys Thr Asn Asp Lys Lys Ser Leu
1   5   10   15
Ser Ile Trp Ser Ile Gly Gly Ser Ile Phe Ala Met Phe Phe Gly Ala
          20   25   30
Gly Asn Ile Val Phe Pro Leu Ala Leu Gly Tyr His Tyr Asn Ala His
     35   40   45
Pro Trp Ser Ala Tyr Phe Gly Met Met Leu Thr Ala Val Cys Val Pro
50   55   60
Leu Leu Gly Leu Val Ser Met Leu Phe Tyr Ser Gly Asp Tyr Gln Lys
65   70   75   80
Phe Phe Phe Ser Ile Gly Arg Ile Pro Gly Met Ile Phe Ile Thr Ala
          85   90   95
Ile Ile Leu Leu Ile Gly Pro Phe Gly Gly Ile Pro Arg Ala Ile Ala
          100   105   110
Val Ser His Ala Thr Leu Ile Ser Leu Ser Glu His Lys Ser Ala Phe
     115   120   125
Ile Pro Ser Leu Pro Ile Phe Ser Ala Ile Cys Cys Val Leu Ile Tyr
     130   135   140
Ile Phe Ser Cys Lys Leu Ser Arg Leu Ile Gln Trp Leu Gly Ser Val
145   150   155   160
Phe Phe Pro Ile Met Leu Val Thr Leu Leu Trp Val Ile Ile Arg Ser
                165   170   175
Phe Met Ile Pro Thr His Pro Met Val Gln Glu Phe Ile Pro Asn Ala
          180   185   190
Arg Gln Ala Trp Leu Ala Gly Phe Ile Glu Gly Phe Asn Thr Met Asp
     195   200   205
Leu Leu Ala Ala Phe Phe Phe Cys Ser Ile Val Leu Ile Ser Leu Arg
     210   215   220
Gln Leu Val Ala Glu Glu Lys His Pro Thr Glu Glu Glu Ile Pro Leu
225   230   235   240
Ser Phe Gln Gly Ile Ser Lys Lys Asn Lys Arg Ser Leu Ala Leu Gly
                245   250   255
Phe Phe Leu Ala Ala Ile Leu Leu Gly Met Thr Tyr Leu Gly Phe Val
          260   265   270
Leu Ser Ala Ala Arg His Ala Gly Leu Leu Val Asn Val Ser Lys Gly
     275   280   285
His Ile Leu Gly Arg Ile Ser Ala Ile Ala Leu Gly Pro Asn Ser Ile
     290   295   300
Leu Ala Gly Val Ser Val Phe Ile Ala Cys Leu Thr Thr Glu Ile Ala
305   310   315   320
Leu Val Gly Ile Val Ala Asp Phe Leu Ala Arg Val Val Ser Phe Lys
                325   330   335
Lys Leu Asn Tyr Ala Ser Ala Val Ile Cys Thr Leu Ile Pro Thr Tyr
          340   345   350

1051

Leu Ile Ser Ile Leu Asn Phe Glu Thr Ile Ser His Leu Leu Leu Pro
          355   360   365
Leu Leu Gln Leu Ser Tyr Pro Ala Leu Ile Val Leu Ala Cys Gly Asn
          370   375   380
Ile Ala Tyr Lys Leu Trp Asn Phe Arg Tyr Ser Pro Val Leu Phe Tyr
385   390   395   400
Leu Thr Leu Ser Leu Thr Ile Val Leu Lys Leu Val Asn
                405   410

<210> 839
<211> 211
<212> PRT
<213> Chlamydia pneumoniae

<400> 839
Leu Thr Met Lys Gln Phe Ile Leu Arg Thr Leu Asn Ala Leu Phe Pro
1   5   10   15
Asn Pro Lys Pro Ser Leu Glu Gly Trp Ser Ser Pro Phe Gln Leu Leu
              20   25   30
Ile Ala Ile Leu Leu Ser Gly Asn Ser Thr Asp Lys Ala Val Asn Ser
          35   40   45
Val Thr Pro Gln Leu Phe Ala Lys Ala Pro Asp Ala Gln Ser Ile Leu
        50   55   60
Asp Leu Pro Pro Gly Lys Leu Tyr Gln Leu Ile Ala Pro Cys Gly Leu
65   70   75   80
Gly Glu Arg Lys Ser Ala Tyr Ile Tyr Gln Leu Ser Gln Ile Leu Val
                85   90   95
Arg Asp Phe His Gly Glu Pro Pro Asn Asp Met Ala Leu Leu Thr Gln
              100   105   110
Leu Pro Gly Val Gly Arg Lys Thr Ala Ser Val Phe Leu Gly Ile Ala
          115   120   125
Tyr Gly Lys Pro Thr Phe Pro Val Asp Thr His Ile Leu Arg Leu Ala
      130   135   140
Gln Arg Trp Lys Ile Ser Glu Lys Lys Ser Pro Ser Ala Ala Glu Lys
145   150   155   160
Asp Leu Ala Arg Phe Phe Gly His Glu Asn Thr Pro Lys Leu His Leu
              165   170   175
Gln Leu Ile Tyr Tyr Ala Arg Gln Tyr Cys Pro Ala Leu His His Lys
          180   185   190
Ile Asp Asn Cys Pro Ile Cys Ser Tyr Leu Ala Lys Glu Ala Asn Ser
      195   200   205
Thr Arg Thr
    210

<210> 840
<211> 472
<212> PRT
<213> Chlamydia pneumoniae

<400> 840
Ile Ser Leu Asn Ile Tyr Pro Asn Ser Phe His Leu Phe Asn Leu Lys
1   5   10   15
Leu Gly Ile Leu Ser Glu Ser Ser Phe Asn Phe Ser Ile Phe Met Leu
              20   25   30
Lys His Asp Thr Ile Ala Ala Ile Ala Thr Pro Pro Gly Glu Gly Ser
          35   40   45
Ile Ala Val Val Arg Leu Ser Gly Pro Gln Ala Ile Val Ile Ala Asp
        50   55   60
Arg Ile Phe Ser Gly Ser Val Ala Ser Phe Ala Ser His Thr Ile His
65   70   75   80

1052

```
Leu Gly Gln Val Ile Phe Glu Glu Thr Leu Ile Asp Gln Ala Leu Leu
                    85                  90                      95
Leu Leu Met Arg Ser Pro Arg Ser Phe Thr Gly Glu Asp Val Val Glu
                100                 105                 110
Phe Gln Cys His Gly Gly Phe Phe Ala Cys Ser Gln Ile Leu Asp Ala
                115                 120                 125
Leu Ile Ala Leu Gly Ala Arg Pro Ala Leu Pro Gly Glu Phe Ser Gln
                130                 135                 140
Arg Ala Phe Leu Asn Gly Lys Ile Asp Leu Val Gln Ala Glu Ala Ile
145                 150                 155                 160
Gln Asn Leu Ile Val Ala Glu Asn Ile Asp Ala Phe Arg Ile Ala Gln
                165                 170                 175
Thr His Phe Gln Gly Asn Phe Ser Lys Lys Ile Gln Glu Ile His Thr
                180                 185                 190
Leu Ile Ile Glu Ala Leu Ala Phe Leu Glu Val Leu Ala Asp Phe Pro
                195                 200                 205
Glu Glu Glu Gln Pro Asp Leu Leu Val Pro Gln Glu Lys Ile Gln Asn
210                 215                 220
Ala Leu His Ile Val Glu Asp Phe Ile Ser Ser Phe Asp Glu Gly Gln
225                 230                 235                 240
Arg Leu Ala Gln Gly Thr Ser Leu Ile Leu Ala Gly Lys Pro Asn Val
                245                 250                 255
Gly Lys Ser Ser Leu Leu Asn Ala Leu Leu Gln Lys Asn Arg Ala Ile
                260                 265                 270
Val Thr His Ile Pro Gly Thr Thr Arg Asp Ile Leu Glu Glu Gln Trp
                275                 280                 285
Leu Leu Gln Gly Lys Arg Ile Arg Leu Leu Asp Thr Ala Gly Gln Arg
290                 295                 300
Thr Thr Asp Asn Asp Ile Glu Lys Glu Gly Ile Glu Arg Ala Leu Ser
305                 310                 315                 320
Ala Met Glu Glu Ala Asp Gly Ile Leu Trp Val Ile Asp Ala Thr Gln
                325                 330                 335
Pro Leu Glu Asp Leu Pro Lys Ile Leu Phe Thr Lys Pro Ser Phe Leu
                340                 345                 350
Leu Trp Asn Lys Ala Asp Leu Thr Pro Pro Pro Phe Leu Asp Thr Ser
                355                 360                 365
Leu Pro Gln Phe Ala Ile Ser Ala Lys Thr Gly Glu Gly Leu Thr Gln
                370                 375                 380
Val Lys Gln Ala Leu Ile Gln Trp Met Gln Lys Gln Glu Ala Gly Lys
385                 390                 395                 400
Thr Ser Lys Val Phe Leu Val Ser Ser Arg His His Met Ile Leu Gln
                405                 410                 415
Glu Val Ala Arg Cys Leu Lys Glu Ala Gln Gln Asn Leu Tyr Leu Gln
                420                 425                 430
Pro Pro Glu Ile Ile Ala Leu Glu Leu Arg Glu Ala Leu His Ser Ile
                435                 440                 445
Gly Met Leu Ser Gly Lys Glu Val Thr Glu Ser Ile Leu Gly Glu Ile
                450                 455                 460
Phe Ser Lys Phe Cys Ile Gly Lys
465                 470

        <210> 841
        <211> 310
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 841
Phe Leu Phe Ile Val Ser Arg Gly Leu Val Gln Lys Pro Gln Tyr Ile
1               5                   10                  15
Asp Arg Ile Thr Lys Lys Lys Val Ile Glu Pro Ile Phe Tyr Glu Lys
                20                  25                  30
```

Thr Met Leu Phe Leu Tyr Asn Ser Lys Leu Gly Lys Lys Leu Ser Val
        35   40   45
Phe Leu Ser Thr His Pro Ile Phe Ser Arg Ile Tyr Gly Trp Leu Gln
        50   55   60
Arg Cys Ser Trp Thr Arg Arg Gln Ile Arg Pro Phe Met Asn Arg Tyr
65   70   75   80
Lys Ile Ser Glu Lys Glu Leu Thr Lys Pro Val Ala Asp Phe Thr Ser
                85   90   95
Phe Asn Asp Phe Phe Thr Arg Lys Leu Lys Pro Glu Ala Arg Pro Ile
            100   105   110
Val Gly Gly Lys Glu Val Phe Ile Thr Pro Val Asp Gly Arg Tyr Leu
        115   120   125
Val Tyr Pro Asn Val Ser Glu Phe Asp Lys Phe Ile Val Lys Ser Lys
    130   135   140
Ala Phe Ser Leu Pro Lys Leu Leu Gly Asp His Glu Leu Thr Lys Leu
145   150   155   160
Tyr Ala His Gly Ser Ile Val Phe Ala Arg Leu Ala Pro Phe Asp Tyr
                165   170   175
His Arg Phe His Phe Pro Cys Asp Cys Leu Pro Gln Lys Thr Arg Cys
            180   185   190
Val Asn Gly Ala Leu Phe Ser Val His Pro Leu Ala Val Lys Asp Asn
        195   200   205
Phe Ile Leu Phe Cys Glu Asn Lys Arg Thr Val Thr Val Leu Glu Thr
    210   215   220
Glu Gln Phe Gly Asn Val Leu Tyr Leu Glu Val Gly Ala Met Asn Val
225   230   235   240
Gly Ser Ile Val Gln Thr Phe Ser Pro Asn Gln Thr Tyr Ala Lys Gly
                245   250   255
Asp Glu Lys Gly Phe Phe Ala Phe Gly Gly Ser Thr Val Ile Leu Leu
            260   265   270
Phe Leu Pro Asn Ala Ile Arg Phe Asp Asn Asp Leu Leu Lys Asn Ser
    275   280   285
Arg Met Gly Phe Glu Thr Arg Cys Leu Met Gly Gln Ser Leu Gly Arg
    290   295   300
Ser Gln Arg Glu Glu Ile
305   310

<210> 842
<211> 468
<212> PRT
<213> Chlamydia pneumoniae

<400> 842
Ile Ser Glu Arg Arg Asn Leu Lys Thr Leu Lys Thr Phe Phe Gly Ile
1   5   10   15
Ala Lys Arg Asp Lys Ser Gln Lys Trp Arg Ile Met Trp Leu Val Ile
        20   25   30
Leu Trp Ala Leu Ala Ala Ser Leu Ala Ile Ala Leu Val Ala Lys Gly
        35   40   45
Tyr Tyr Arg Phe Val Tyr Phe Arg Arg Tyr Ala Val Gln Val Ile Arg
    50   55   60
Glu Val Arg Leu Ser Met Glu Leu Lys Glu Trp Ala Leu Ala Glu Gln
65   70   75   80
Gln Leu Leu Pro Ile Leu Lys Lys Arg Ser Tyr Arg Arg Gln Cys Leu
                85   90   95
Phe Glu Tyr Met Arg Ile Leu Arg Lys Met Gln Arg Phe Glu Glu Ser
            100   105   110
Glu Lys Leu Leu Ala Glu Ala Lys Lys Leu Gly Leu Arg Gly Pro Tyr
        115   120   125
Phe Phe Leu Glu Ile Ala Tyr Lys Ala Tyr Arg Phe Gly Ala Phe Lys
    130   135   140

1054

```
Glu Cys Ala Gln Ala Phe Ala Ser Val Pro Gln Asp Leu Phe Glu .Glu
145                 150                 155                 160
Glu Asp Ala Ala Lys Tyr Ala Ser Ala Leu Val Arg Leu Gly Asp Leu
            165                 170                 175
Asp Ala Ala Cys Ser Leu Ile Glu Pro Trp Ile Ser Pro Leu Ser His
        180                 185                 190
Gln Glu Thr Phe Val Thr Met Gly His Ile Tyr Phe Thr Ser Lys Arg
    195                 200                 205
Tyr Lys Asp Ala Ile Asp Phe Tyr Asn Arg Ala Asn Ala Leu Gly Val
    210                 215                 220
Cys Pro Val Glu Val Thr Tyr Asn Leu Ala Gln Ala Tyr Arg Ile Thr
225                 230                 235                 240
Ser Ser Tyr Ala Lys Ala Gly Lys Leu Phe Arg Lys Leu Leu Ser Asn
            245                 250                 255
Pro Val Tyr Lys Glu Glu Ala Leu Phe Asn Ile Gly Leu Cys Glu Gln
            260                 265                 270
Lys Leu Gly Arg Pro Gly Lys Ala Leu Leu Ile Tyr Gln Ser Ser Asp
    275                 280                 285
Leu Trp Ser Arg Gly Asp Ala Leu Leu Met Lys Tyr Ala Ala Met Ala
    290                 295                 300
Ala Met Asp Gln Arg Asp Tyr Val Leu Ala Glu Pro Cys Trp Glu Leu
305                 310                 315                 320
Ala Leu Arg Cys Ser Thr Phe Ala Lys Asp Tyr Lys Cys Gly Leu Gly
            325                 330                 335
Tyr Gly Phe Ser Leu Cys Arg Leu Arg Lys Tyr Gly Asp Ala Glu Arg
            340                 345                 350
Val Tyr Cys Asn Leu Ile Gln Asn Phe Pro Glu Cys Leu Thr Ala Cys
            355                 360                 365
Lys Ala Leu Ala Trp Leu Cys Gly Val Gly Tyr Ala Thr Leu Leu Gly
    370                 375                 380
Ser Glu Glu Gly Leu Met Tyr Ala Lys Lys Ala Val Glu Leu Asp His
385                 390                 395                 400
Ser Cys Glu Thr Leu Glu Leu Leu Ser Ala Cys Glu Ala Arg Cys Gly
            405                 410                 415
Asn Phe Asp Ala Ala Tyr Glu Ile Gln Ser Phe Leu Ser Ser Arg Asp
            420                 425                 430
Thr Ser Leu Gln Glu Lys Gln Arg Arg Ser Gln Ile Leu Arg Ile Leu
    435                 440                 445
Arg Lys Lys Leu Pro Leu Asn Asp His His Ile Val Glu Val Asp Ala
450                 455                 460
Leu Leu Ala Ala
465

        <210> 843
        <211> 974
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 843
    Ile Lys Arg His Met Leu Gly Phe Leu Lys Arg Phe Phe Gly Ser Ser
    1                 5                 10                 15
    Gln Glu Arg Ile Leu Lys Lys Phe Gln Lys Leu Val Asp Lys Val Asn
                20                 25                 30
    Ile Tyr Asp Glu Met Leu Thr Pro Leu Ser Asp Asp Glu Leu Arg Asn
                35                 40                 45
    Lys Thr Ala Glu Leu Lys Gln Arg Tyr Gln Asn Gly Glu Ser Leu Asp
        50                 55                 60
    Ser Met Leu Pro Glu Ala Tyr Gly Val Val Lys Asn Val Cys Arg Arg
    65                 70                 75                 80
    Leu Ala Gly Thr Pro Val Glu Val Ser Gly Tyr His Gln Arg Trp Asp
                85                 90                 95
```

Met Val Pro Tyr Asp Val Gln Ile Leu Gly Ala Ile Ala Met His Lys
100   105   110
Gly Phe Ile Thr Glu Met Gln Thr Gly Glu Gly Lys Thr Leu Thr Ala
115   120   125
Val Met Pro Leu Tyr Leu Asn Ala Leu Thr Gly Lys Pro Val His Leu
130   135   140
Val Thr Val Asn Asp Tyr Leu Ala Gln Arg Asp Cys Glu Trp Val Gly
145   150   155   160
Ser Val Leu Arg Trp Leu Gly Leu Thr Thr Gly Val Leu Val Ser Gly
165   170   175
Thr Leu Leu Glu Lys Arg Lys Lys Ile Tyr Gln Cys Asp Val Val Tyr
180   185   190
Gly Thr Ala Ser Glu Phe Gly Phe Asp Tyr Leu Arg Asp Asn Ser Ile
195   200   205
Ala Thr Arg Leu Glu Glu Gln Val Gly Arg Gly Tyr Tyr Phe Ala Ile
210   215   220
Ile Asp Glu Val Asp Ser Ile Leu Ile Asp Glu Ala Arg Thr Pro Leu
225   230   235   240
Ile Ile Ser Gly Pro Gly Glu Lys His Asn Pro Val Tyr Phe Glu Leu
245   250   255
Lys Glu Lys Val Ala Ser Leu Val Tyr Leu Gln Lys Glu Leu Cys Ser
260   265   270
Arg Ile Ala Leu Glu Ala Arg Arg Gly Leu Asp Ser Phe Leu Asp Val
275   280   285
Asp Ile Leu Pro Lys Asp Lys Lys Val Leu Glu Gly Ile Ser Glu Phe
290   295   300
Cys Arg Ser Leu Trp Leu Val Ser Lys Gly Met Pro Leu Asn Arg Val
305   310   315   320
Leu Arg Arg Val Arg Glu His Pro Asp Leu Arg Ala Met Ile Asp Lys
325   330   335
Trp Asp Val Tyr Tyr His Ala Glu Gln Asn Lys Glu Glu Ser Leu Glu
340   345   350
Arg Leu Ser Glu Leu Tyr Ile Ile Val Asp Glu His Asn Asn Asp Phe
355   360   365
Glu Leu Thr Asp Lys Gly Met Gln Gln Trp Val Glu Tyr Ala Gly Gly
370   375   380
Ser Thr Glu Glu Phe Val Met Met Asp Met Gly His Glu Tyr Ala Leu
385   390   395   400
Ile Glu Asn Asp Glu Thr Leu Ser Pro Ala Asp Lys Ile Asn Lys Lys
405   410   415
Ile Ala Ile Ser Glu Glu Asp Thr Leu Arg Lys Ala Arg Ala His Gly
420   425   430
Leu Arg Gln Leu Leu Arg Ala Gln Leu Leu Met Glu Arg Asp Val Asp
435   440   445
Tyr Ile Val Arg Asp Asp Gln Ile Val Ile Ile Asp Glu His Thr Gly
450   455   460
Arg Pro Gln Pro Gly Arg Arg Phe Ser Glu Gly Leu His Gln Ala Ile
465   470   475   480
Glu Ala Lys Glu His Val Thr Ile Arg Lys Glu Ser Gln Thr Leu Ala
485   490   495
Thr Val Thr Leu Gln Asn Phe Phe Arg Leu Tyr Glu Lys Leu Ala Gly
500   505   510
Met Thr Gly Thr Ala Ile Thr Glu Ser Arg Glu Phe Lys Glu Ile Tyr
515   520   525
Asn Leu Tyr Val Leu Gln Val Pro Thr Phe Lys Pro Cys Leu Arg Ile
530   535   540
Asp His Asn Asp Glu Phe Tyr Met Thr Glu Arg Glu Lys Tyr His Ala
545   550   555   560
Ile Val Asn Glu Ile Ala Thr Ile His Gly Lys Gly Asn Pro Ile Leu
565   570   575

1056

Val Gly Thr Glu Ser Val Glu Val Ser Glu Lys Leu Ser Arg Ile Leu
                580   585   590
Arg Gln Asn Arg Ile Glu His Thr Val Leu Asn Ala Lys Asn His Ala
                595   600   605
Gln Glu Ala Glu Ile Ile Ala Gly Ala Gly Lys Leu Gly Ala Val Thr
            610   615   620
Val Ala Thr Asn Met Ala Gly Arg Gly Thr Asp Ile Lys Leu Asp Asn
625   630   635   640
Glu Ala Val Ile Val Gly Gly Leu His Val Ile Gly Thr Thr Arg His
                645   650   655
Gln Ser Arg Arg Ile Asp Arg Gln Leu Arg Gly Arg Cys Ala Arg Leu
                660   665   670
Gly Asp Pro Gly Ala Ala Lys Phe Phe Leu Ser Phe Glu Asp Arg Leu
            675   680   685
Met Arg Leu Phe Ala Ser Pro Lys Leu Asn Thr Leu Ile Arg His Phe
        690   695   700
Arg Pro Pro Glu Gly Glu Ala Met Ser Asp Pro Met Phe Asn Arg Leu
705   710   715   720
Ile Glu Thr Ala Gln Lys Arg Val Glu Gly Arg Asn Tyr Thr Ile Arg
                725   730   735
Lys His Thr Leu Glu Tyr Asp Asp Val Met Asn Lys Gln Arg Gln Ala
            740   745   750
Ile Tyr Ala Phe Arg His Asp Val Leu His Ala Glu Ser Val Phe Asp
        755   760   765
Leu Ala Lys Glu Ile Leu Cys His Val Ser Leu Met Val Ala Ser Leu
    770   775   780
Val Met Ser Asp Arg Gln Phe Lys Gly Trp Thr Leu Pro Asn Leu Glu
785   790   795   800
Glu Trp Ile Thr Ser Ser Phe Pro Ile Ala Leu Asn Ile Glu Glu Leu
                805   810   815
Arg Gln Leu Lys Asp Thr Asp Ser Ile Ala Glu Lys Ile Ala Ala Glu
            820   825   830
Leu Ile Gln Glu Phe Gln Val Arg Phe Asp His Met Val Glu Gly Leu
        835   840   845
Ser Lys Ala Gly Gly Glu Glu Leu Asp Ala Ser Ala Ile Cys Arg Asp
    850   855   860
Val Val Arg Ser Val Met Val Met His Ile Asp Glu Gln Trp Arg Ile
865   870   875   880
His Leu Val Asp Met Asp Leu Leu Arg Ser Glu Val Gly Leu Arg Thr
                885   890   895
Val Gly Gln Lys Asp Pro Leu Leu Glu Phe Lys His Glu Ser Phe Leu
            900   905   910
Leu Phe Glu Ser Leu Ile Arg Asp Ile Arg Ile Thr Ile Ala Arg His
        915   920   925
Leu Phe Arg Leu Glu Leu Thr Val Glu Pro Asn Pro Arg Val Asn Asn
    930   935   940
Val Ile Pro Thr Val Ala Thr Ser Phe His Asn Asn Val Asn Tyr Gly
945   950   955   960
Pro Leu Glu Leu Thr Val Val Thr Asp Ser Glu Asp Gln Asp
                965   970

<210> 844
<211> 103
<212> PRT
<213> Chlamydia pneumoniae

<400> 844
Lys Tyr Tyr Thr Pro Pro Thr Ile Ser Arg Ser Pro Trp Ser Asn Ile
1   5   10   15
Ala Leu Lys Thr Ile Ser Glu Ser Glu Tyr Asp Cys Asn Gln Gln Leu
        20   25   30

Leu Lys Thr Gln Ser Leu Leu Thr Thr Asn Val Asp Thr Leu Leu Asn
        35   40   45
Ala Pro Lys Asp Phe Pro Asn Ser Lys Asn Gln Lys His Ile Leu Phe
    50   55   60
Cys Ile Ala Asn Asn Thr Leu Ser His Tyr Ala Gln Phe Leu Ile Ala
65   70   75   80
Gly Asn Arg Arg Lys Phe Trp Ile Arg Tyr Tyr Asn Asp Gln Val Trp
            85   90   95
Ser Glu Trp Thr Pro Phe Ile
                100

        <210> 845
        <211> 79
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 845
Asn Lys Asn Lys Leu Ile Ile Ser Trp Arg Phe Lys Val Met Asn Tyr
1   5   10   15
Asp Gln Tyr Asp Thr Pro Asp Thr Asp His Asp Gln Ile Phe Glu Asp
            20   25   30
Leu Leu Asp Asn Ser Glu Glu Ala Ala Ser Leu Asp Lys Tyr Gln Glu
        35   40   45
Thr Gly Val Tyr Val Glu Glu Asn Thr Asp Gln Gly Asp Leu Leu Ile
    50   55   60
Val Leu Gly Glu Ser Val Phe Lys Asn Thr Ile His Gln Glu Gln
65   70   75

        <210> 846
        <211> 494
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 846
Lys Asn Arg Ile Glu Thr Ile Met Leu Lys Ile Ala Ile Leu Gly Arg
1   5   10   15
Pro Asn Val Gly Lys Ser Ser Leu Phe Asn Arg Leu Cys Lys Arg Ser
            20   25   30
Leu Ala Ile Val Asn Ser Gln Glu Gly Thr Thr Arg Asp Arg Leu Tyr
        35   40   45
Gly Glu Leu His Ala Phe Gly Val Pro Ala Gln Val Ile Asp Thr Gly
    50   55   60
Gly Val Asp His Asn Ser Glu Asp Tyr Phe Gln Lys His Ile Tyr Asn
65   70   75   80
Gln Ala Leu Thr Gly Ala Lys Glu Ala Asp Val Leu Leu Leu Val Ile
            85   90   95
Asp Ile Arg Cys Gly Ile Thr Glu Glu Asp Ala His Leu Ala Lys Leu
            100   105   110
Leu Leu Pro Leu Lys Lys Pro Leu Ile Leu Val Ala Asn Lys Ala Asp
        115   120   125
Ser Arg Gln Glu Glu Leu Gln Ile His Glu Thr Tyr Lys Leu Gly Ile
    130   135   140
Arg Asp Ile Val Val Thr Ser Thr Ala His Asp Lys His Ile Asp Thr
145   150   155   160
Leu Leu Gln Arg Ile Lys Leu Val Ala Asn Leu Pro Glu Pro Arg Glu
                165   170   175
Glu Glu Glu Glu Gly Leu Glu Glu Leu Ser Val Asp Glu His Glu Glu
            180   185   190
Ser Glu Ala Ala Leu Pro Ser Asn Thr Phe Pro Asp Phe Ser Glu Val
    195   200   205

                            1058

Phe Thr Glu Gly Phe Ser Pro Glu Glu Pro Cys Thr Ile Pro Glu Ser
210   215   220
Pro Gln Gln Ala Pro Lys Thr Leu Lys Ile Ala Leu Ile Gly Arg Pro
225   230   235   240
Asn Val Gly Lys Ser Ser Ile Ile Asn Gly Leu Leu Asn Glu Glu Arg
              245   250   255
Cys Ile Ile Asp Asn Thr Pro Gly Thr Thr Arg Asp Asn Ile Asp Ile
          260   265   270
Leu Tyr Ser His Lys Asp Arg Gln Tyr Leu Phe Ile Asp Thr Ala Gly
      275   280   285
Leu Arg Lys Met Lys Ser Val Lys Asn Ser Ile Glu Trp Ile Ser Ser
  290   295   300
Ser Arg Thr Glu Lys Ala Ile Ser Arg Ala Asp Ile Cys Leu Leu Val
305   310   315   320
Ile Asp Ala Thr Gln Lys Leu Ser Ser Tyr Glu Lys Arg Ile Leu Ser
                  325   330   335
Leu Ile Ser Lys Arg Lys Lys Pro His Ile Ile Leu Ile Asn Lys Trp
              340   345   350
Asp Leu Leu Glu Glu Val Arg Met Glu His Tyr Cys Lys Asp Leu Arg
          355   360   365
Ala Thr Asp Pro Tyr Leu Gly Gln Ala Lys Met Leu Cys Ile Ser Ala
      370   375   380
Thr Thr Lys Arg Asn Leu Lys Lys Ile Phe Ser Ala Ile Asp Glu Leu
385   390   395   400
His His Val Val Ser Asn Lys Val Pro Thr Pro Ile Val Asn Lys Thr
                  405   410   415
Leu Ala Ser Ala Leu His Arg Asn His Pro Gln Val Ile Gln Gly Arg
              420   425   430
Arg Leu Arg Ile Tyr Tyr Ala Ile Gln Lys Thr Thr Thr Pro Leu Gln
          435   440   445
Phe Leu Leu Phe Ile Asn Ala Lys Ser Leu Leu Thr Lys His Tyr Glu
      450   455   460
Tyr Tyr Leu Lys Asn Thr Leu Lys Ser Ser Phe Asn Leu Tyr Gly Ile
465   470   475   480
Pro Phe Asp Leu Glu Phe Lys Glu Lys Pro Lys Arg His Asn
                  485   490

<210> 847
<211> 434
<212> PRT
<213> Chlamydia pneumoniae

<400> 847
Ser Ala Asn Asn Tyr Gln Lys Asp Pro Arg Ser Tyr Arg Leu Ala Leu
1   5   10   15
Phe Ser Ser Tyr Phe Arg Gly Val Met Thr Thr Ile Ala Ile Glu Ala
              20   25   30
Ala Lys Lys Val Leu Ile Lys Leu Arg Asn Ala Gly Tyr Gln Ala Tyr
      35   40   45
Phe Val Gly Gly Cys Val Arg Asp Met Leu Met Asn Arg Pro Leu Glu
  50   55   60
Asp Ile Asp Ile Ala Thr Asn Ala Ser Pro Thr Ile Val Ser Thr Ile
65   70   75   80
Phe Pro Asp Val Ile Ser Ile Gly Val Ala Phe Gly Ile Ile Val Val
                  85   90   95
Lys Gln Asp Gly Arg Leu Phe Glu Val Ala Thr Phe Arg Ser Asp Gly
          100   105   110
Glu Tyr Lys Asp Gly Arg His Pro Asp Arg Ile Ile Phe Ser Ser Met
      115   120   125
Arg Glu Asp Ala Leu Arg Arg Asp Phe Thr Val Asn Gly Met Tyr Tyr
  130   135   140

1059

Asp Pro Phe Glu Asp Lys Val Phe Asp Phe Val Glu Gly Thr Arg Asp
145   150   155   160
Ile Glu Lys Lys Val Ile Arg Ala Ile Gly His Pro Arg Leu Arg Phe
                165   170   175
Ser Glu Asp Lys Leu Arg Ile Leu Arg Ala Ile Arg Phe Ser Ser Ser
            180   185   190
Leu Gly Phe Thr Leu Asp Pro Thr Thr Glu Arg Ala Ile Ile Lys Glu
        195   200   205
Ala Pro Ala Leu Val Asn Ser Val Ser Pro Glu Arg Ile Trp Gln Glu
    210   215   220
Leu Lys Lys Met Leu Lys Arg Gln Pro Tyr Gly Ala Leu Ser Leu Leu
225   230   235   240
Leu Lys Leu Lys Val Leu Ile Phe Ile Phe Pro Glu Leu Arg Asp Ile
                245   250   255
Pro Tyr Ser Leu Leu Arg Thr Thr Ile Glu Phe Ala Arg Lys Phe Asn
                260   265   270
Pro Thr His Phe Pro Glu Ile Leu Phe Leu Leu Pro Leu Phe Gln Gly
        275   280   285
Val Ser Glu Glu Ala Ala Thr Val Ala Phe Gly Arg Leu Arg Ile Ser
    290   295   300
Asn Lys Glu Leu Lys Leu Ile Glu Ser Trp Tyr Glu Ala Leu Pro His
305   310   315   320
Phe Gln Asn Gln Ser Gly Asn Arg Val Phe Trp Ala His Phe Leu Ala
                325   330   335
Ser Pro Thr Ala Pro Leu Phe Leu Glu Leu Phe Ser Ala Leu Gln Lys
            340   345   350
Asp Pro Ser Arg Gln Gln His Phe Ile Ser Arg Val Gln Glu Leu Glu
        355   360   365
Ser Arg Leu Glu Gln Phe Ile Leu Arg Ile Lys Thr Ser Ser Pro Val
    370   375   380
Val Ser Ala Pro Asp Leu Ile Ala Lys Gly Ile Ser Pro Gly Arg Leu
385   390   395   400
Leu Gly Asp Leu Leu Arg Glu Ala Glu Ile Leu Ser Ile Glu Asn Glu
                405   410   415
Cys Leu Asp Lys Glu Lys Ile Leu Leu Leu Leu Gln Glu Lys Gly Phe
            420   425   430

Trp Lys

<210> 848
<211> 424
<212> PRT
<213> Chlamydia pneumoniae

<400> 848
Arg Glu His Met Asn Lys Lys Asn Leu Thr Ile Cys Ser Phe Cys Gly
1   5   10   15
Arg Ser Glu Lys Asp Val Glu Lys Leu Ile Ala Gly Pro Ser Val Tyr
                20   25   30
Ile Cys Asp Tyr Cys Ile Lys Leu Cys Ser Gly Ile Leu Asp Lys Lys
            35   40   45
Pro Ser Ser Thr Ile Ser Ser Ala Pro Val Ser Glu Thr Pro Ser Gln
        50   55   60
Pro Ser Asp Leu Arg Val Leu Thr Pro Lys Glu Ile Lys Lys His Ile
,65   70   75   80
Asp Glu Tyr Val Ile Gly Gln Glu Arg Ala Lys Lys Thr Ile Ala Val
                85   90   95
Ala Val Tyr Asn His Tyr Lys Arg Ile Arg Ala Leu Leu His Asn Lys
                100   105   110
Gln Val Ser Tyr Gly Lys Ser Asn Val Leu Leu Leu Gly Pro Thr Gly
        115   120   125

1060

Ser Gly Lys Thr Leu Ile Ala Lys Thr Leu Ala Lys Ile Leu Asp Val
130   135   140
Pro Phe Thr Ile Ala Asp Ala Thr Thr Leu Thr Glu Ala Gly Tyr Val
145   150   155   160
Gly Glu Asp Val Glu Asn Ile Val Leu Arg Leu Leu Gln Ala Ala Asp
                165   170   175
Tyr Asp Val Ala Arg Ala Glu Arg Gly Ile Ile Tyr Ile Asp Glu Ile
            180   185   190
Asp Lys Ile Gly Arg Thr Thr Ala Asn Val Ser Ile Thr Arg Asp Val
        195   200   205
Ser Gly Glu Gly Val Gln Gln Ala Leu Leu Lys Ile Val Glu Gly Thr
    210   215   220
Thr Ala Asn Val Pro Pro Lys Gly Gly Arg Lys His Pro Asn Gln Glu
225   230   235   240
Tyr Ile Arg Val Asn Thr Glu Asn Ile Leu Phe Ile Val Gly Gly Ala
                245   250   255
Phe Val Asn Leu Asp Lys Ile Ile Ala Lys Arg Leu Gly Lys Thr Thr
            260   265   270
Ile Gly Phe Ser Asp Asp Gln Ala Asp Leu Ser Gln Lys Thr Arg Asp
        275   280   285
His Leu Leu Ala Lys Val Glu Thr Glu Asp Leu Ile Ala Phe Gly Met
    290   295   300
Ile Pro Glu Phe Val Gly Arg Phe Asn Cys Ile Val Asn Cys Glu Glu
305   310   315   320
Leu Ser Leu Asp Glu Leu Val Ala Ile Leu Thr Glu Pro Thr Asn Ala
                325   330   335
Ile Val Lys Gln Tyr Met Glu Leu Phe Ala Glu Glu Asn Val Lys Leu
        340   345   350
Val Phe Lys Lys Glu Ala Leu Tyr Ala Ile Ala Lys Lys Ala Lys Gln
    355   360   365
Ala Lys Thr Gly Ala Arg Ala Leu Gly Met Ile Leu Glu Asn Leu Leu
370   375   380
Arg Asp Leu Met Phe Glu Ile Pro Ser Asp Pro Thr Val Glu Ala Ile
385   390   395   400
His Ile Gln Glu Asp Thr Ile Ala Glu Asn Lys Ala Pro Ile Ile Ile
                405   410   415
Arg Arg Thr Pro Glu Ala Ile Ala
            420

<210> 849
<211> 211
<212> PRT
<213> Chlamydia pneumoniae

<400> 849
Lys Leu Phe Asp Glu Glu Thr Gln Met Thr Leu Val Pro Tyr Val Val
1   5   10   15
Glu Asp Thr Gly Arg Gly Glu Arg Ala Met Asp Ile Tyr Ser Arg Leu
            20   25   30
Leu Lys Asp Arg Ile Val Met Ile Gly Gln Glu Ile Thr Glu Pro Leu
        35   40   45
Ala Asn Thr Val Ile Ala Gln Leu Leu Phe Leu Met Ser Glu Asp Pro
    50   55   60
Lys Lys Asp Ile Gln Ile Phe Ile Asn Ser Pro Gly Gly Tyr Ile Thr
65   70   75   80
Ala Gly Leu Ala Ile Tyr Asp Thr Ile Arg Phe Leu Gly Cys Asp Val
                85   90   95
Asn Thr Tyr Cys Ile Gly Gln Ala Ala Ser Met Gly Ala Leu Leu Leu
            100   105   110
Ser Ala Gly Thr Lys Gly Lys Arg His Ala Leu Pro His Ser Arg Met
        115   120   125

1061

Met Ile His Gln Pro Ser Gly Gly Ile Ile Gly Thr Ser Ala Asp Ile
            130   135   140
Gln Leu Gln Ala Ala Glu Ile Leu Thr Leu Lys Lys His Leu Ala Asn
145   150   155   160
Ile Leu Ser Glu Cys Thr Gly Gln Pro Val Glu Lys Ile Ile Glu Asp
                    165   170   175
Ser Glu Arg Asp Phe Phe Met Gly Ala Glu Glu Ala Ile Ser Tyr Gly
            180   185   190
Leu Ile Asp Lys Val Val Thr Ser Ala Lys Glu Thr Asn Lys Asp Thr
            195   200   205

Ser Ser Thr
    210

<210> 850
<211> 460
<212> PRT
<213> Chlamydia pneumoniae

<400> 850
Val Gln Ala Ser Ser Pro Ala Phe Pro Phe Lys Ser Asn Lys Lys Gly
1   5   10   15
Cys Leu Val Pro Arg Ser Leu Ser Asn Glu Gln Phe Ser Val Asp Leu
            20   25   30
Glu Glu Ser Pro Gly Cys Ile Val Ser Ala Leu Val Lys Val Ser Pro
        35   40   45
Glu Val Leu Asn Lys Leu Asn Lys Gln Ala Leu Lys Lys Ile Lys Lys
    50   55   60
Glu Ile Thr Leu Pro Gly Phe Arg Lys Gly Lys Ala Pro Asp Asp Val
65   70   75   80
Ile Ala Ser Arg Tyr Pro Thr Asn Val Arg Lys Glu Leu Gly Glu Leu
                85   90   95
Val Thr Gln Asp Ala Tyr His Ala Leu Ser Thr Val Gly Asp Arg Arg
            100   105   110
Pro Leu Ser Pro Lys Ala Val Arg Ser Asn Ser Ile Thr Gln Phe Asp
        115   120   125
Leu Gln Glu Gly Ala Lys Val Glu Phe Ser Tyr Glu Ala Phe Pro Ala
    130   135   140
Ile Ser Asp Leu Pro Trp Glu Asn Leu Ser Leu Pro Gln Glu Glu Ala
145   150   155   160
Ala Ser Glu Ile Ser Asp Ser Asp Ile Glu Lys Gly Leu Thr Asn Ile
                165   170   175
Gly Met Phe Phe Ala Thr Lys Thr Pro Val Glu Arg Pro Ser Gln Glu
            180   185   190
Gly Asp Phe Ile Ser Ile Ser Leu His Val Ser Lys Ser Asn Asp Glu
        195   200   205
Asn Ala Ser Ser Ala Ala Ile Phe Glu Asn Lys Tyr Phe Lys Leu Ser
    210   215   220
Glu Glu Glu Met Thr Asp Ala Phe Lys Glu Lys Phe Leu Gly Ile Ser
225   230   235   240
Thr Gly His Arg Val Val Glu Thr Ile Thr Ser Pro Glu Ile Gln Ser
                245   250   255
Phe Leu Arg Gly Asp Thr Leu Thr Phe Thr Val Asn Ala Val Ile Glu
            260   265   270
Val Ser Ile Pro Glu Ile Asp Asp Glu Lys Ala Arg Gln Leu Gln Ala
        275   280   285
Glu Ser Leu Asp Asp Leu Lys Ala Lys Leu Arg Ile Gln Leu Glu Lys
    290   295   300
Gln Ala Lys Asp Lys Gln Leu Gln Lys Arg Phe Ser Glu Ala Glu Asp
305   310   315   320
Ala Leu Ala Met Leu Val Asp Phe Glu Leu Pro Thr Ser Leu Leu Glu
                325   330   335

1062

Glu Arg Ile Ser Leu Ile Thr Arg Glu Lys Leu Leu Asn Ala Arg Leu
                340   345   350
Ile Gln Tyr Cys Ser Asp Glu Glu Leu Glu Lys Arg Lys Ser Glu Leu
                355   360   365
Ile Lys Glu Ala Glu Glu Asp Ala Thr Lys Ala Leu Lys Leu Leu Phe
                370   375   380
Leu Thr His Lys Ile Phe Ser Asp Glu Lys Leu Thr Ile Ser Arg Glu
385   390   395   400
Glu Leu Gln Tyr Met Met Asp Val Cys Ser Arg Glu Arg Phe Gly Gln
                405   410   415
Gln Pro Pro Lys Asp Ile Ser Asn Asp Thr Leu Gln Glu Leu Val Met
                420   425   430
Ser Ala Arg Asp Arg Leu Thr Tyr Ser Lys Ala Ile Glu His Val Leu
                435   440   445
Arg Lys Ala Glu Leu Leu Ala Ser Thr Pro Ser Ala
450   455   460

<210> 851
<211> 1178
<212> PRT
<213> Chlamydia pneumoniae

<400> 851
Ala Asp Tyr Ile Ile His Ser Tyr Ser Arg Gly Glu Met Leu Asn Phe
1   5   10   15
Arg Lys Leu Arg Arg Asp Phe Ser Ala Asn Ile Leu Gln Asp Gly Lys
                20   25   30
Lys Leu Phe Glu Gln Gly Ala Val Ile Asp Ala Lys Ile Leu Ser Met
                35   40   45
Asn Gly Glu Thr Val Cys Ile Ser Ala Gln Val Arg Gly Leu Tyr Asp
    50   55   60
Asn Ile Tyr Glu Cys Glu Ile Glu Val Asp Arg Ser Glu Ser Asp Thr
65   70   75   80
Val Asp Ser Asn Cys Asp Cys Ser Tyr Asn Tyr Asp Cys Gln His Ile
                85   90   95
Val Ala Leu Leu Phe Tyr Leu Glu Gln Tyr Phe Asn Glu Met Val Val
                100   105   110
Ala Tyr Ala Arg Ser Ala Asp Leu Glu Thr Asp His Glu Ile Asn Glu
                115   120   125
Glu Val Lys Lys Glu Leu Lys Glu Thr Phe Val Ala Ala Ala Thr Lys
                130   135   140
Glu Glu Glu Arg Lys Asp Arg Glu His Gln Lys Glu Ile Leu Arg Glu
145   150   155   160
Tyr Val His Ala Ala Asn Ala Leu Ser Ala Asn Pro Phe Phe Leu Pro
                165   170   175
Leu Glu Tyr Leu Glu Lys Asp Ser Ala Glu Leu Ala Val Leu Phe Val
                180   185   190
Ser Val Asn Glu Asp Thr Phe Ala Pro Ala Asn Gln Pro Ile Glu Phe
                195   200   205
Gln Leu Val Leu Arg Leu Pro Cys Arg Ser Lys Pro Phe Tyr Ile Ser
                210   215   220
Asn Ile Arg Thr Phe Leu Glu Gly Val Leu Tyr Gln Glu Pro Ile Val
225   230   235   240
Leu Asn Gly Arg Arg Phe Phe Phe Thr Met Gln Ser Phe Asn Ala Ser
                245   250   255
Asp Arg Lys Leu Ile Asp Leu Leu Ile Arg Tyr Val Arg Tyr Pro Asn
                260   265   270
His Thr Thr Glu Glu Lys Leu Leu Lys Ser Ala Tyr Leu Met Pro Pro
                275   280   285
Ala Leu Gly Val Ile Leu Ala Lys Met Phe Glu His Gln Leu Ala Asp
                290   295   300

1063

```
Arg Gly Gly Gly Ser Leu Gly Glu Lys Glu Ser Phe Ser Gly Leu Phe
305            310              315                        320
Cys Gly Asn Leu Glu Glu Pro Leu Cys Trp Ser Leu Thr Pro Ala Lys
              325              330                    335
Met Lys Phe Asn Leu Asp Phe Phe Asp Met Pro Tyr Lys Ala Leu Leu
              340              345                  350
Met Thr Pro Val Ile Leu Val Asp Asp Asp Glu Val Gln Pro Glu Gln
              355              360              365
Thr Met Leu Leu Glu Ser Asp Ala Pro Gly Ile Ile His His Phe Val
              370              375              380
Tyr His Arg Phe Ser Pro Gln Ile Lys Arg Ala His Leu Arg Ser Phe
385              390              395                        400
Ser Arg Leu Arg Asp Ile Ala Ile Pro Glu Ala Leu Phe Gly Ser Phe
              405              410                        415
Arg Glu Asn Ala Leu Pro Val Phe Gln Glu Tyr Ala Glu Ile Ala Asn
              420              425                        430
Val His Leu Leu Asn Ser Phe Val Thr Leu Pro Tyr Val Asp Glu Val
              435              440                    445
Arg Ala Ile Cys Asp Met Ser Tyr Leu Asp Gly Glu Leu Glu Ala Lys
              450              455              460
Leu His Phe Leu Tyr Gly Ser Leu Arg Val Pro Ala Ala Ser Leu Ala
465              470              475                        480
Leu Gln Tyr Gln Asp Val Arg Ala Phe Ile Ser Asp Glu Gly Ile Leu
              485              490                        495
Ala Arg Asn Leu Val Glu Glu Arg Lys Met Leu Glu Glu Val Phe Ser
              500              505                  510
Gly Phe Ile Tyr Asp Glu Arg Asp Gly Ala Phe Arg Val Lys Ser Glu
              515              520                  525
Lys Lys Ile Val Glu Phe Met Thr Glu Thr Ile Pro Ala Asn Gln His
530              535              540
Arg Ile Thr Phe Asn Cys Pro Glu Asn Leu Ser Gly Gln Phe Ile Tyr
545              550              555                        560
Asp Glu Thr Ile Phe Glu Leu Ser Phe Arg Glu Gly Ser Asp Ile Asn
              565              570                    575
Tyr Tyr Glu Ala Asp Leu Lys Val His Gly Leu Leu Lys Gly Val Pro
              580              585                  590
Leu Asp Leu Leu Trp Asp Cys Ile Ser Ala Lys Lys Arg Phe Leu Glu
              595              600              605
Leu Pro Lys Ala Gly Gln Gln Ser Lys Gly Thr Arg Arg Gly Lys Val
610              615              620
Asn Ser Gly Lys Leu Pro Cys Ile Leu Val Leu Asp Leu Glu Lys Ile
625              630              635                        640
Ala Pro Val Val Gln Ile Phe Asn Glu Ile Gly Phe Lys Val Leu Asp
              645              650                        655
Asp Leu Val Gln Lys Cys Pro Leu Trp Ser Leu Thr Gly Ile Ser Leu
              660              665                  670
Asp Gln Phe Glu Ala Leu Pro Val Asn Phe Ser Met Ser Glu Arg Leu
              675              680                  685
Ile Glu Ile Gln Lys Gln Ile Arg Gly Glu Ile Glu Phe Asp Phe Gln
              690              695              700
Asp Val Pro Gln Gln Ile Gln Ala Thr Leu Arg Ser Tyr Gln Thr Glu
705              710              715                        720
Gly Val His Trp Leu Glu Arg Leu Arg Lys Met His Leu Asn Gly Ile
              725              730                        735
Leu Ala Asp Asp Met Gly Leu Gly Lys Thr Leu Gln Ala Ile Ile Ala
              740              745                        750
Val Thr Gln Ser Lys Leu Glu Lys Gly Ser Gly Cys Ser Leu Ile Val
              755              760                  765
Cys Pro Thr Ser Leu Val Tyr Asn Trp Lys Glu Glu Phe Arg Lys Phe
770                   775                   780
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1064

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Asn Pro Glu Phe Arg Thr Leu Val Ile Asp Gly Val Pro Ser Gln Arg
785              790                 795                 800
Arg Lys Gln Leu Thr Ala Leu Ala Asp Arg Asp Val Ala Ile Thr Ser
                805                 810                 815
Tyr Asn Leu Leu Gln Lys Asp Val Glu Leu Tyr Lys Ser Phe Arg Phe
                820                 825                 830
Asp Tyr Val Val Leu Asp Glu Ala His His Ile Lys Asn Arg Thr Thr
                835                 840                 845
Arg Asn Ala Lys Ser Val Lys Met Ile Gln Ser Asp His Arg Leu Ile
                850             855                 860
Leu Thr Gly Thr Pro Ile Glu Asn Ser Leu Glu Glu Leu Trp Ser Leu
865                 870                 875                 880
Phe Asp Phe Leu Met Pro Gly Leu Leu Ser Ser Tyr Asp Arg Phe Val
                885                 890                 895
Gly Lys Tyr Ile Arg Thr Gly Asn Tyr Met Gly Asn Lys Ala Asp Asn
                900                 905                 910
Met Val Ala Leu Lys Lys Lys Val Ser Pro Phe Ile Leu Arg Arg Met
                915                 920                 925
Lys Glu Asp Val Leu Lys Asp Leu Pro Pro Val Ser Glu Ile Leu Tyr
        930                 935                 940
His Cys His Leu Thr Glu Ser Gln Lys Glu Leu Tyr Gln Ser Tyr Ala
945                 950                 955                 960
Ala Ser Ala Lys Gln Glu Leu Ser Arg Leu Val Lys Gln Glu Gly Phe
                965                 970                 975
Glu Arg Ile His Ile His Val Leu Ala Thr Leu Thr Arg Leu Lys Gln
            980                 985                 990
Ile Cys Cys His Pro Ala Ile Phe Ala Lys Asp Ala Pro Glu Pro Gly
        995                 1000                1005
Asp Ser Ala Lys Tyr Asp Met Leu Met Asp Leu Leu Ser Ser Leu Val
        1010                1015                1020
Asp Ser Gly His Lys Thr Val Val Phe Ser Gln Tyr Thr Lys Met Leu
1025                1030                1035                1040
Gly Ile Ile Lys Lys Asp Leu Glu Ser Arg Gly Ile Pro Phe Val Tyr
                1045                1050                1055
Leu Asp Gly Ser Thr Lys Asn Arg Leu Asp Leu Val Asn Gln Phe Asn
                1060                1065                1070
Glu Asp Pro Ser Leu Leu Val Phe Leu Ile Ser Leu Lys Ala Gly Gly
        1075                1080                1085
Thr Gly Leu Asn Leu Val Gly Ala Asp Thr Val Ile His Tyr Asp Met
        1090                1095                1100
Trp Trp Asn Pro Ala Val Glu Asn Gln Ala Thr Asp Arg Val His Arg
1105                1110                1115                1120
Ile Gly Gln Ser Arg Ser Val Ser Ser Tyr Lys Leu Val Thr Leu Asn
                1125                1130                1135
Thr Ile Glu Glu Lys Ile Leu Thr Leu Gln Asn Arg Lys Lys Ser Leu
        1140                1145                1150
Val Lys Lys Val Ile Asn Ser Asp Asp Glu Val Val Ser Lys Leu Thr
        1155                1160                1165
Trp Glu Glu Val Leu Glu Leu Leu Gln Ile
1170                    1175

        <210> 852
        <211> 379
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 852
Leu Gly Lys Lys Tyr Trp Asn Cys Cys Arg Tyr Asp Phe Met Ser Pro
1               5               10                  15
His Arg Asn Leu Phe Lys Leu Lys Asn Phe Ser Asn Arg Leu Tyr Asn
            20              25                  30
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1065

Arg Ala Leu Gly Arg Phe Asp Lys Val Phe Asn Phe Phe Ser Gly Asn
          35   40   45
Val Gly Ile Asp Leu Gly Thr Ala Asn Thr Leu Val Tyr Val Arg Gly
          50   55   60
Arg Gly Ile Val Leu Ser Glu Pro Ser Val Val Ala Val Asp Ala Gln
65   70   75   80
Thr His Ala Val Leu Ala Val Gly His Lys Ala Lys Ala Met Leu Gly
                    85   90   95
Lys Thr Pro Arg Lys Ile Met Ala Val Arg Pro Met Lys Asp Gly Val
                100   105   110
Ile Ala Asp Phe Glu Ile Ala Glu Gly Met Leu Lys Ala Leu Ile Lys
          115   120   125
Arg Val Thr Pro Ser Arg Ser Val Phe Arg Pro Arg Ile Leu Ile Ala
          130   135   140
Val Pro Ser Gly Ile Thr Gly Val Glu Lys Arg Ala Val Glu Asp Ser
          145   150   155   160
Ala Leu His Ala Gly Ala Gln Glu Val Ile Leu Ile Glu Glu Pro Met
                165   170   175
Ala Ala Ala Ile Gly Val Asp Leu Pro Val His Glu Pro Ala Ala Ser
                180   185   190
Met Ile Ile Asp Ile Gly Gly Gly Thr Thr Glu Ile Ala Ile Ile Ser
          195   200   205
Leu Gly Gly Ile Val Glu Ser Arg Ser Leu Arg Ile Ala Gly Asp Glu
          210   215   220
Phe Asp Glu Cys Ile Ile Asn Tyr Met Arg Arg Thr Tyr Asn Leu Met
225   230   235   240
Ile Gly Pro Arg Thr Ala Glu Glu Ile Lys Ile Thr Ile Gly Ser Ala
                245   250   255
Tyr Pro Leu Gly Asp Gln Glu Leu Glu Met Glu Val Arg Gly Arg Asp
          260   265   270
Gln Val Ala Gly Leu Pro Ile Thr Lys Arg Ile Asn Ser Val Glu Ile
          275   280   285
Arg Glu Cys Leu Ala Glu Pro Ile Gln Gln Ile Ile Glu Cys Val Arg
          290   295   300
Leu Thr Leu Glu Lys Cys Pro Pro Glu Leu Ser Ala Asp Leu Val Glu
305   310   315   320
Arg Gly Met Val Leu Ala Gly Gly Gly Ala Leu Ile Lys Gly Leu Asp
                325   330   335
Lys Ala Leu Ser Lys Asn Thr Gly Leu Ser Val Ile Thr Ala Pro His
                340   345   350
Pro Leu Leu Ala Val Cys Leu Gly Thr Gly Lys Ala Leu Glu His Leu
          355   360   365
Asp Gln Phe Lys Lys Arg Lys Gly Asn Leu Val
    370   375

        <210> 853
        <211> 606
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 853
Arg Glu Phe Gly Ile Val Met Val Trp Ser Thr Asn Ile Lys His Glu
1   5   10   15
Gly Leu Lys Ser Trp Ile Asp Glu Val Ala Lys Leu Thr Thr Pro Lys
          20   25   30
Asp Ile Arg Leu Cys Asp Gly Ser Asp Thr Glu Tyr Asp Glu Leu Cys
          35   40   45
Thr Leu Met Glu Ser Thr Gly Thr Met Ile Arg Leu Asn Pro Glu Phe
          50   55   60
His Pro Asn Cys Phe Leu Val Arg Ser Ser Ala Asp Asp Val Ala Arg
65   70   75   80

                        1066

Val Glu Gln Phe Thr Phe Ile Cys Thr Ser Thr Glu Ala Glu Ala Gly
                85   90   95

Pro Thr Asn Asn Trp Arg Asp Pro Gln Glu Met Arg Arg Glu Leu His
          100   105   110

Gln Leu Phe Arg Gly Cys Met Gln Gly Arg Thr Leu Tyr Ile Val Pro
          115   120   125

Phe Cys Met Gly Pro Leu Asp Ser Pro Phe Ser Ile Val Gly Val Glu
          130   135   140

Leu Thr Asp Ser Pro Tyr Val Val Cys Ser Met Lys Ile Met Thr Arg
145   150   155   160

Met Gly Asp Asp Val Leu Arg Ser Leu Gly Thr Ser Gly Lys Phe Leu
          165   170   175

Lys Cys Leu His Ser Val Gly Lys Pro Leu Ser Pro Gly Glu Ala Asp
          180   185   190

Val Ser Trp Pro Cys Asn Pro Lys Ser Met Arg Ile Val His Phe Gln
          195   200   205

Asp Asp Ser Ser Val Met Ser Phe Gly Ser Gly Tyr Gly Gly Asn Ala
          210   215   220

Leu Leu Gly Lys Lys Cys Val Ala Leu Arg Leu Ala Ser Tyr Met Ala
225   230   235   240

Lys Ser Gln Gly Trp Leu Ala Glu His Met Leu Ile Ile Gly Ile Thr
          245   250   255

Asn Pro Glu Gly Lys Lys Lys Tyr Phe Ser Ala Ser Phe Pro Ser Ala
          260   265   270

Cys Gly Lys Thr Asn Leu Ala Met Leu Met Pro Lys Leu Pro Gly Trp
          275   280   285

Lys Ile Glu Cys Ile Gly Asp Asp Ile Ala Trp Ile Arg Pro Gly Arg
          290   295   300

Asp Gly Arg Leu Tyr Ala Val Asn Pro Glu Tyr Gly Phe Phe Gly Val
305   310   315   320

Ala Pro Gly Thr Ser Glu Arg Thr Asn Pro Asn Ala Leu Ala Thr Cys
          325   330   335

Arg Ser Asn Ser Ile Phe Thr Asn Val Ala Leu Thr Ala Asp Gly Asp
          340   345   350

Val Trp Trp Glu Gly Leu Thr Glu Gln Pro Pro Glu Pro Leu Thr Asp
          355   360   365

Trp Leu Gly Lys Pro Trp Lys Pro Gly Gly Ser Pro Ala Ala His Pro
370   375   380

Asn Ser Arg Phe Thr Ala Pro Leu Arg Gln Cys Pro Ser Leu Asp Pro
385   390   395   400

Glu Trp Asn Ser Pro Gln Gly Val Pro Leu Asp Ala Ile Ile Phe Gly
          405   410   415

Gly Arg Arg Ser Glu Thr Ile Pro Leu Val Tyr Glu Ala Leu Ser Trp
          420   425   430

Glu His Gly Val Thr Ile Gly Ala Gly Met Ser Ser Thr Thr Thr Ala
          435   440   445

Ala Ile Val Gly Gln Leu Gly Lys Leu Arg His Asp Pro Phe Ala Met
          450   455   460

Leu Pro Phe Cys Gly Tyr Asn Met Ala Tyr Tyr Phe Gln His Trp Leu
465   470   475   480

Ser Phe Ala Glu Asn Arg Ser Leu Lys Leu Pro Lys Ile Phe Gly Val
          485   490   495

Asn Trp Phe Arg Lys Asn Asn Gln Gly Glu Phe Leu Trp Pro Gly Phe
          500   505   510

Ser Glu Asn Leu Arg Val Leu Glu Trp Ile Phe Gln Arg Thr Asp Gly
          515   520   525

Leu Glu Asp Ile Ala Glu Arg Thr Pro Ile Gly Tyr Leu Pro Asn Ile
          530   535   540

Gln Lys Phe Asn Leu Asn Gly Leu Asn Leu Asp Leu Gln Thr Val Gln
545   550   555   560

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Glu Leu Phe Ser Val Asp Ala Glu Gly Trp Leu Ala Glu Val Glu Asn
            565                     570                     575
Ile Gly Glu Tyr Leu Lys Ile Phe Gly Ser Asp Cys Pro Gln Gln Ile
            580                     585                     590
Thr Asp Glu Leu Leu Arg Ile Lys Ser Glu Leu Lys Glu Lys
            595                     600                 605


        <210> 854
        <211> 780
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 854
Ile Lys Leu Arg Ile Ile Asp Tyr Tyr Tyr Leu Ile Asn Thr Val Thr
1               5                   10                      15
Leu Gln Pro Ser Tyr Ile Asn Phe Thr Pro Asn Val Thr Thr Ala Leu
            20                      25                  30
Ser Gly Gly Lys Ile Asp Thr Ser Ala Ile Glu Leu Ser Cys Ser Ala
        35                      40                  45
Leu Phe Phe Gln Glu Leu Gln Asp Lys Ala Gln Gly Leu Lys His Ala
    50                      55                  60
Leu Gly Leu Val Gln Glu Leu Ser Ala Glu Ala Leu Arg Pro Ala Gln
65              70                      75                      80
Val Gln Thr Ser Ile Ser Tyr Leu Pro Thr Glu Glu Ser Ser Arg Pro
                85                      90                  95
Gly Ile Ser Ala Gly Ile Ile Asp Arg Thr Met Pro Thr Phe Thr Asp
            100                     105                     110
Asp Glu Val Lys Ala Ile Leu Gln Asn Pro Asn Phe Glu Thr Ser Lys
        115                     120                     125
Ile Phe Val Glu Gly Leu Asp Lys Val Phe Lys Ser Tyr Leu Asp Ser
    130                     135                     140
Val Thr Pro Pro Glu Gly Ile Asp Pro Ser Asn Pro Glu Ser Ala Ile
145                 150                     155                 160
Ile Leu Asn Tyr Ile Thr Leu Leu Asn Asn Leu Lys Pro Lys Phe Ala
                165                     170                     175
Ala Gly Ser Thr Pro Thr Asp Ala Asp Tyr Asn Ala Leu Tyr Ala Leu
            180                     185                     190
Pro Gly Asp Phe Val Lys Glu Ile Glu Ala Leu Lys Ala Ala Asp Ala
        195                     200                     205
Pro Pro Lys Ser Lys Val His Ala Phe Trp Gln Glu Ile Met Thr Ile
    210                     215                     220
Tyr Asn Asn Met Gln Val Leu Ser Tyr Pro Val Thr Asp Tyr Leu Asn
225                 230                     235                 240
Val Gln Ile Ala Asp Leu Ser Leu Asn Ile Thr Ala Ala Gln Glu Val
                245                     250                     255
Gln Gln Tyr Leu Lys Asn Phe Tyr Ser Ile Leu Lys Asp Ile Leu Asn
            260                     265                     270
Pro Gly Trp Thr Asp Pro Gln Ala Thr His Tyr Pro Ala Asp Ala Glu
        275                     280                     285
Tyr Asn Ala Arg Asp Ala Gly Val Ile Gln Ser Leu Leu Asn Leu Ser
    290                     295                     300
Gly Asn Tyr Arg Gln Leu Thr Glu Asn Met Leu Pro Asn Thr Asp Thr
305                 310                     315                 320
Ser Leu Pro Gln Glu Ile Ile Ala Gln Ile Arg Ser Phe Gln Asn Gly
                325                     330                     335
Val Asn Gly Thr Ile Ile Ala Ser Asn Thr Leu Leu Pro Thr Thr Met
            340                     345                     350
Arg Leu Asp Thr Leu Leu Gly Val Ile Tyr Thr Tyr Gln Cys Cys Ala
        355                     360                     365
Thr Ile Phe Gly Met Ser Tyr Gly Thr Ser Thr Pro Ala Lys Gln Asn
    370                     375                     380
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1068

Tyr Ile Asp Ala Ile Asn Gln Glu Lys Ser Tyr Trp Gln Ala Arg Ala
385   390   395   400
Asn Gly Phe Asp Val Thr Ser Asp Gln Val Phe Asp Gln Phe Ala Thr
              405   410   415
Asn Ile Gln Ser Gly Thr Ser Tyr Arg Gly Ile Asp Leu Phe Lys Asn
              420   425   430
Asn Lys Val Asn Glu Ile Asn Pro Ile Phe Leu Ser Gln Ala Ala Ser
              435   440   445
Phe Leu Arg Tyr Pro Tyr Asn Leu Met Ser Arg Ser Met Tyr Gln Thr
450   455   460
Ile Glu Asp Ala Ala Asn Arg Ser Ile Thr Ala Leu Asp Gly Leu Ile
465   470   475   480
Ser Gly Trp Ser Thr Gln Ile Ala Thr Phe Gln Thr Gln Lys Asn Ser
              485   490   495
Leu Asp Pro Ser Leu Leu Lys Tyr Phe Asp Thr Met Lys Ala Asn Lys
              500   505   510
Glu Ser Phe Val Thr Thr Ala Pro Leu Gln Met Val Tyr Ser Ser Leu
              515   520   525
Met Leu Asp Lys Tyr Leu Pro Thr Gln Gln Asn Val Ile Ala Ser Leu
530   535   540
Gly Ile Gln Met Thr Tyr Ser Asn Lys Ala Ala Lys Tyr Leu Asn Glu
545   550   555   560
Leu Ile Lys Glu Ile Thr Thr Phe Gln Ser Ala Asp Ile Tyr Tyr Ser
              565   570   575
Leu Ser Ile Tyr Leu Lys Gln Met Asn Leu Gln Ala Val Ala Asp Pro
              580   585   590
Ile Gly Lys Ala Val Gly Val Leu Asn Asp Glu Lys Thr Arg Ala Met
              595   600   605
Ala Asp Ile Thr Arg Cys Asn Lys Ile Lys Ala Ala Ile Asp Lys Met
610   615   620
Leu Val Glu Ile Lys Ala Asp Ala Glu Leu Ser Lys Ser Gln Ile Arg
625   630   635   640
Glu Leu Val Asp Thr Leu Thr Asn Phe Lys Ser Gln Ser Asp Asp Leu
              645   650   655
Ile Arg Asn Leu Ser Cys Leu Leu Gly Phe Leu Ser Gly Leu Thr Leu
              660   665   670
Lys Ala Val Asn Asp Pro Asn Ala Thr Tyr Glu Ala Phe Thr Ala Glu
              675   680   685
Ile Phe Thr Glu Pro Phe Asn Asn Trp Lys Arg Gln Leu Ala Thr Phe
690   695   700
Glu Ser Phe Val Ile Gln Gly Gly Gln Asn Gly Ile Thr Pro Gly Gly
705   710   715   720
Gln Gln Gln Leu Leu Gln Ala Met Glu Ser Ser Gln Gln Asp Phe Ser
              725   730   735
Thr Phe Asn Gln Asn Gln Gln Leu Ala Leu Gln Leu Glu Ser Ser Ala
              740   745   750
Met Gln Gln Glu Trp Thr Leu Val Ser Ala Ala Leu Ala Leu Leu Asn
755   760   765
Gln Met Val Ser Lys Ile Ala Arg Arg Ile Lys Ser
770   775   780

<210> 855
<211> 391
<212> PRT
<213> Chlamydia pneumoniae

<400> 855
Asn Ile Met His Pro Lys Ile Glu Lys Arg Asn Ser Leu Pro Leu Thr
1   5   10   15
Ala Val Ala Pro Val Phe Glu Glu Ser Tyr His Pro Ser Val Ala Thr
              20   25   30

Thr Val Asp Tyr Val Asp Ala Thr Thr Leu Ser Arg His Leu Thr Val
35 40 45
Leu Lys Asp Val Ile Lys Glu Ala Arg Asn Leu Asp Leu Gly Lys Ala
50 55 60
Phe Leu Thr Ser Met Lys Gln Gly Phe Ile Asn Thr Gly Thr Glu Leu
65 70 75 80
Ala Ile Ile Gln Ala Ser Leu Ala Asp Gln Ser Ser Arg Glu Ser Arg
85 90 95
Lys Lys Glu Glu Lys Ile Phe His Gln His Leu Gly Lys Ala Ala Pro
100 105 110
Gln Ala Ala Thr Ala Thr Ser Gly Val Gln Pro Thr Ala Asp Pro Val
115 120 125
Ala Asp Lys Met Pro Leu Gln Ser Ala Phe Ala Tyr Val Leu Leu Asp
130 135 140
Lys Tyr Ile Pro Ala Gln Glu Glu Ala Leu Tyr Ala Leu Gly Arg Glu
145 150 155 160
Leu Asn Leu Ser Gly Tyr Ala Gln Asn Leu Phe Ser Pro Leu Leu Asp
165 170 175
Met Ile Lys Ser Phe Asn Ser Ala Pro Ile Asn Tyr Asn Leu Gly Ser
180 185 190
Tyr Ile Ser Gln Thr Ser Gly Thr Ala Asn Phe Ala Tyr Gly Tyr Glu
195 200 205
Met Ile Leu Ser Arg Tyr Asn Asn Glu Val Ser Gln Cys Arg Leu Asp
210 215 220
Ile Ala Ser Thr Val Lys Ala Lys Ala Ala Leu Ala Asn Met Ser Ala
225 230 235 240
Ser Val Lys Ala Asn Val Ser Leu Thr Asp Ala Gln Lys Lys Gln Ile
245 250 255
Glu Asp Ile Ile Ala Ser Tyr Thr Lys Ser Leu Asp Val Ile His Thr
260 265 270
Gln Leu Thr Asp Val Met Thr Asn Leu Ala Ser Ile Thr Phe Val Pro
275 280 285
Gly Leu Asn Lys Tyr Asp Pro Ser Tyr Arg Ile Val Gly Gly Asp Leu
290 295 300
Ser Ile Ile Ala Leu Gln Asn Asp Glu Lys Val Leu Val Asp Gly Lys
305 310 315 320
Val Asp Ile Thr Thr Ala Val Asn Glu Gly Gly Leu Leu Asn Phe Phe
325 330 335
Thr Thr Val Leu Thr Asp Val Gln Asn Tyr Gly Asp Leu Ala Gln Thr
340 345 350
Gln Gln Leu Met Leu Asp Leu Glu Leu Lys Ala Met Gln Gln Gln Trp
355 360 365
Ser Leu Val Ser Ala Ser Leu Lys Leu Leu Asn Gly Met Tyr Thr Thr
370 375 380
Val Ile Ser Gly Phe Lys Asn
385 390

<210> 856
<211> 348
<212> PRT
<213> Chlamydia pneumoniae

<400> 856
Gly Pro Phe Asp Met Asn Ser Lys Met Leu Lys His Leu Arg Leu Ala
1 5 10 15
Thr Leu Ser Phe Ser Met Phe Phe Gly Ile Val Ser Ser Pro Ala Val
20 25 30
Tyr Ala Leu Gly Ala Gly Asn Pro Ala Ala Pro Val Leu Pro Gly Val
35 40 45
Asn Pro Glu Gln Thr Gly Trp Cys Ala Phe Gln Leu Cys Asn Ser Tyr
50 55 60

Asp Leu Phe Ala Ala Leu Ala Gly Ser Leu Lys Phe Gly Phe Tyr Gly
65   70   75   80
Asp Tyr Val Phe Ser Glu Ser Ala His Ile Thr Asn Val Pro Val Ile
                85   90   95
Thr Ser Val Thr Thr Ser Gly Thr Gly Thr Thr Pro Thr Ile Thr Ser
            100   105   110
Thr Thr Lys Asn Val Asp Phe Asp Leu Asn Asn Ser Ser Ile Ser Ser
        115   120   125
Ser Cys Val Phe Ala Thr Ile Ala Leu Gln Glu Thr Ser Pro Ala Ala
    130   135   140
Ile Pro Leu Leu Asp Ile Ala Phe Thr Ala Arg Val Gly Gly Leu Lys
145   150   155   160
Gln Tyr Tyr Arg Leu Pro Leu Asn Ala Tyr Arg Asp Phe Thr Ser Asn
                165   170   175
Pro Leu Asn Ala Glu Ser Glu Val Thr Asp Gly Leu Ile Glu Val Gln
                180   185   190
Ser Asp Tyr Gly Ile Val Trp Gly Leu Ser Leu Gln Lys Val Leu Trp
    195   200   205
Lys Asp Gly Val Ser Phe Val Gly Val Ser Ala Asp Tyr Arg His Gly
    210   215   220
Ser Ser Pro Ile Asn Tyr Ile Ile Val Tyr Asn Lys Ala Asn Pro Glu
225   230   235   240
Ile Tyr Phe Asp Ala Thr Asp Gly Asn Leu Ser Tyr Lys Glu Trp Ser
                245   250   255
Ala Ser Ile Gly Ile Ser Thr Tyr Leu Asn Asp Tyr Val Leu Pro Tyr
                260   265   270
Ala Ser Val Ser Ile Gly Asn Thr Ser Arg Lys Ala Pro Ser Asp Ser
    275   280   285
Phe Thr Glu Leu Glu Lys Gln Phe Thr Asn Phe Lys Phe Lys Ile Arg
    290   295   300
Lys Ile Thr Asn Phe Asp Arg Val Asn Phe Cys Phe Gly Thr Thr Cys
305   310   315   320
Cys Ile Ser Asn Asn Phe Tyr Tyr Ser Val Glu Gly Arg Trp Gly Tyr
                325   330   335
Gln Arg Ala Ile Asn Ile Thr Ser Gly Leu Gln Phe
                340   345

<210> 857
<211> 336
<212> PRT
<213> Chlamydia pneumoniae

<400> 857
Gly Leu Met Lys Gln His Ile Gly Tyr Leu Gly Met Gly Ile Trp Gly
1   5   10   15
Phe Cys Leu Ala Ser Leu Leu Ala Asn Lys Gly Tyr Pro Val Val Ala
            20   25   30
Trp Ser Arg Asn Pro Asp Leu Ile Lys Gln Leu Gln Glu Glu Arg Arg
        35   40   45
His Pro Leu Ala Pro Asn Val Val Ile Ser Pro Asn Leu Ser Phe Thr
    50   55   60
Thr Asp Met Lys Glu Ala Ile His Asn Ala Phe Met Ile Val Glu Gly
65   70   75   80
Val Thr Ser Ala Gly Ile Arg Pro Val Ala Glu Gln Leu Lys Gln Ile
                85   90   95
Thr Asp Leu Ser Val Pro Phe Val Ile Thr Ser Lys Gly Ile Glu Gln
            100   105   110
Asn Thr Gly Leu Leu Leu Ser Glu Ile Met Leu Glu Val Leu Gly Asp
        115   120   125
Ser Val Thr Pro Tyr Leu Gly Tyr Leu Ser Gly Pro Ser Ile Ala Lys
    130   135   140

Glu Val Leu Asn Gly Ser Pro Cys Ser Val Val Val Ser Ala Tyr Asp
145   150   155   160
Ser Gln Thr Leu Lys Gln Ile His Glu Ala Phe Ser Leu Pro Thr Phe
                165   170   175
Arg Val Tyr Pro Asn Thr Asp Ile Lys Gly Ala Ala Leu Gly Gly Ala
            180   185   190
Leu Lys Asn Val Ile Ala Ile Ala Cys Gly Ile Ala Glu Gly Leu Ser
        195   200   205
Phe Gly Asn Asn Ala Lys Ala Gly Leu Val Thr Arg Gly Leu His Glu
    210   215   220
Met Arg Lys Leu Ala Ala Ile Met Asp Cys Lys Pro Glu Thr Leu Asn
225   230   235   240
Gly Leu Ala Gly Leu Gly Asp Leu Cys Val Thr Cys Phe Ser Glu Ser
                245   250   255
Ser Arg Asn Leu Arg Phe Gly His Leu Leu Ala Gln Gly Leu Thr Phe
                260   265   270
Glu Gln Ala Lys Ala Lys Ile Gly Met Val Val Glu Gly Ala Tyr Thr
        275   280   285
Ala Leu Ser Ala Tyr Gln Val Ala Lys His His Lys Ile Asp Met Pro
    290   295   300
Ile Thr Thr Gly Ile Tyr Arg Val Leu Tyr Glu Asn Leu Asp Leu Lys
305   310   315   320
Glu Gly Ile Ala Leu Leu Leu Gln Arg Asn Thr Lys Glu Glu Phe Leu
                325   330   335

        <210> 858
        <211> 472
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 858
Gly Ser Arg Asp Arg Asn Val Arg Leu Thr Val Met Thr Glu Ser Val
1   5   10   15
Tyr Ser Pro Ser Ala Met His Val Asn Ser Leu Ala Asp Lys Leu Lys
            20   25   30
Ala Ile Asn Gln Glu His Ile Leu Asp Ile Trp Pro Ser Leu Ser Pro
        35   40   45
Lys Gln Gln Gln Arg Leu Phe Gln Gln Leu Thr Ser Val Asp Ile Asp
    50   55   60
Phe Phe Arg Lys Gln Gln Gln Leu Leu Ser Ser Pro Thr Ala Ile Leu
65   70   75   80
Lys Asp Phe His Pro Ile Thr Ser Phe Ala Ser Ser Gly Glu Asp Pro
                85   90   95
Glu Arg Ala His Ala Gly Thr Thr Leu Leu Lys Glu Lys Lys Val Ala
            100   105   110
Cys Val Val Leu Ala Gly Gly Gln Gly Ser Arg Leu Lys Cys Asp Gly
        115   120   125
Pro Lys Gly Leu Phe Pro Val Ser Pro Ile Lys Lys Lys Pro Leu Phe
    130   135   140
Gln Leu Val Ala Glu Lys Val Arg Ala Ala Ser Lys Leu Ala Gly Gln
145   150   155   160
Pro Leu Pro Leu Ala Phe Met Thr Ser Pro Leu Asn Thr Arg Gln Thr
                165   170   175
Arg Ser Phe Phe Glu Ser Asn Asp Tyr Phe His Leu Asp Pro Asn Gln
            180   185   190
Val Asp Phe Phe Cys Gln Pro Leu Trp Pro Leu Leu Thr Leu Ser Gly
        195   200   205
Asp Leu Phe Leu Glu Asp Met Asp Thr Leu Ala Leu Gly Pro Asn Gly
    210   215   220
Asn Gly Cys Ile Ala Thr Leu Leu Tyr Thr Ser Gly Val Trp Glu Lys
225   230   235   240

                            1072

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Trp Lys Asn Ala Gly Ile Glu Met Val Ser Val Ile Pro Ile Asp Asn
                245                 250                 255
Pro Leu Ala Leu Pro Phe Asp Val Glu Leu Cys Gly Phe His Ala Met
            260                 265                 270
Ser Asn Asn Glu Val Thr Ile Lys Ala Ala Leu Arg Gln Thr Ala Ile
        275                 280                 285
Glu Asp Val Gly Ile Leu Val Lys Ser His Asp Ser Gly Lys Thr Ser
    290                 295                 300
Val Ile Glu Tyr Ser Glu Ile Pro Gln Asn Glu Arg Phe Ala Leu Asn
305                 310                 315                 320
Glu Asp Gly Lys Leu Lys Tyr Cys Leu Ala Asn Ile Gly Leu Tyr Cys
            325                 330                 335
Leu Ser Met Asp Phe Ile Arg His Ala Ala Tyr Gln Gln Leu Pro Leu
            340                 345                 350
Tyr Lys Val His Lys His Ala Lys Gln Leu Gly His Thr Ser Leu Asn
            355                 360                 365
Glu Lys Asn Ala Trp Lys Phe Glu Glu Phe Ile Phe Asp Leu Phe Cys
    370                 375                 380
Tyr Ser Asp His Cys Gln Thr Leu Val Tyr Pro Arg Gln Glu Cys Phe
385                 390                 395                 400
Ala Pro Leu Lys Asn Leu Glu Gly Asn His Ser Pro Asp Thr Val Arg
            405                 410                 415
Gln Ala Leu Ser Asp Arg Glu Arg Gln Leu Phe His Lys Val Thr Gly
            420                 425                 430
Lys Lys Leu Ser Pro Asn Thr Thr Phe Glu Leu Glu Ala Asp Phe Tyr
            435                 440                 445
Tyr Pro Ser Thr Ser Thr Ser Leu His Trp Glu Asn Lys Ala Phe Phe
            450                 455                 460
Glu Glu Pro Phe Phe Glu Ala Ser
465                 470
```

        <210> 859
        <211> 139
        <212> PRT
        <213> Chlamydia pneumoniae

```
        <400> 859
Leu Leu Leu Leu Arg Gln Tyr Ile Lys Thr Ala Arg Gly Ile Ser Arg
1               5                   10                  15
Leu Met Arg Asp Arg Leu Gly Ser Leu Ser Leu Ile Leu Lys Val Lys
            20                  25                  30
Ile His Lys Tyr Leu Asp Thr Leu His Asn Gln Lys Arg Leu Ala Leu
        35                  40                  45
Thr Val Ser Arg Asn Ile Gln Ala Thr Asn Lys Arg Ile Ala Asp Leu
    50                  55                  60
His Leu Glu Arg Tyr Glu His Phe Ile Ser Arg Asp Asn Ile Lys His
65                  70                  75                  80
Tyr Asp Ile Leu Leu Glu Tyr Leu Lys Thr Leu Gln Ser Ser Leu Tyr
            85                  90                  95
Lys Gln Gln Ser Glu Ser Leu Arg Phe Leu Glu Ile His His Gln Gln
            100                 105                 110
Leu Gln Glu Leu Ile Asn Arg Arg Lys Ile Ile Glu Lys Ile Lys Asn
        115                 120                 125
Asn Lys Tyr Ser Lys Asp Gln Glu Ile Gly Thr
    130                 135
```

        <210> 860
        <211> 453
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 860

```
Arg Asn Ser Glu Thr Arg Asn Gln Arg Arg Thr Arg Pro Ser Thr Phe
1               5                   10                      15
Cys Phe Asp Ser Met Asn His Leu Asn Lys Glu Lys Leu His Ile His
            20                  25                  30
Asn Trp Gln Pro Tyr Arg Ala Cys Gly Leu Leu Ser Lys Val Ser Gly
        35                  40                  45
Asn Leu Ile Glu Val Asp Gly Leu Ser Ala Cys Leu Gly Glu Leu Cys
    50                  55                  60
Lys Ile Ser Ser Thr Lys Asp Pro Asn Leu Leu Ala Glu Val Ile Gly
65                  70                  75                      80
Phe His Asn His Thr Thr Leu Leu Met Ser Leu Ser Pro Leu His Ser
                85                  90                  95
Val Ala Leu Gly Thr Glu Val Leu Pro Leu Arg Arg Pro Pro Ser Leu
            100                 105                 110
His Leu Ser Asp His Leu Leu Gly Arg Val Leu Asp Ala Phe Gly Asn
        115                 120                 125
Pro Ile Asp Lys Lys Glu Asp Leu Pro Lys Thr His Arg Lys Pro Leu
        130                 135                 140
Leu Ser Leu Pro Pro Ser Pro Met Met Arg Gln Pro Ile Asp Gln Ile
145                 150                 155                 160
Phe Pro Thr Gly Ile Lys Ala Ile Asp Ala Phe Leu Thr Leu Gly Lys
                165                 170                 175
Gly Gln Arg Ile Gly Val Phe Ser Glu Pro Gly Ser Gly Lys Ser Ser
            180                 185                 190
Leu Leu Ser Ala Ile Ala Leu Gly Ser Lys Ser Thr Ile Asn Val Ile
        195                 200                 205
Ala Leu Ile Gly Glu Arg Gly Arg Glu Val Arg Glu Tyr Ile Glu Lys
    210                 215                 220
His Ser Asn Ala Leu Lys Gln Gln Arg Thr Ile Ile Ile Ala Ala Pro
225                 230                 235                 240
Ala His Glu Thr Ala Pro Thr Lys Val Ile Ala Gly Arg Ala Ala Met
                245                 250                 255
Thr Ile Ala Glu Tyr Phe Arg Glu Gln Gly His Glu Val Leu Phe Ile
            260                 265                 270
Met Asp Ser Leu Ser Arg Trp Ile Ala Ala Leu Gln Glu Val Ala Leu
        275                 280                 285
Ala Arg Gly Glu Thr Leu Ser Ala His Gln Tyr Ala Ala Ser Val Phe
    290                 295                 300
His His Val Ser Glu Phe Thr Glu Arg Ala Gly Asn Asn Asp Lys Gly
305                 310                 315                 320
Ser Ile Thr Ala Leu Tyr Ala Ile Leu Tyr Tyr Pro Lys His Pro Asp
            325                 330                 335
Ile Phe Thr Asp Tyr Leu Lys Ser Leu Leu Asp Gly His Phe Phe Leu
        340                 345                 350
Thr Ser Gln Gly Lys Ala Leu Ala Ser Pro Pro Ile Asp Ile Leu Ser
    355                 360                 365
Ser Leu Ser Arg Ser Ala Gln Ala Leu Ala Leu Pro His His Tyr Ala
370                 375                 380
Ala Ala Glu Arg Leu Arg Ser Leu Leu Lys Val Tyr Asn Glu Ala Leu
385                 390                 395                 400
Asp Ile Ile His Leu Gly Ala Tyr Thr Pro Gly Gln Asp Glu Glu Leu
            405                 410                 415
Asp Lys Ala Val Lys Leu Leu Pro Ser Ile Lys Ala Phe Leu Ala Gln
        420                 425                 430
Pro Leu Ser Ser Tyr Cys Tyr Leu Asp Asn Thr Leu Lys Gln Leu Glu
        435                 440                 445
Ala Leu Ala Asp Ser
    450
```

1074

<210> 861
<211> 181
<212> PRT
<213> Chlamydia pneumoniae

<400> 861
Val Phe Leu Val Thr Thr Pro Gln Ser Pro Gly Ser Leu Ser Gln Ser
1   5   10   15
His Leu Pro His Pro His Asp Pro Trp Asp Thr Glu Pro Thr Ser Leu
            20   25   30
Pro Glu Asp Pro Asn Asp Lys Ala Ser Gln Glu Leu His Ser Leu Val
        35   40   45
His Leu Phe Arg Lys Leu Ser Ile His Leu Leu Ser Glu Val Glu Lys
    50   55   60
Thr Val Gln Gln Leu Lys Pro Asp Leu Leu Glu Leu Ala Leu Leu Ile
65   70   75   80
Cys Glu Lys Phe Leu Tyr Lys Lys Leu Glu Asn Pro Gln Glu Leu Ala
                85   90   95
Leu Leu Leu Ser Thr Ala Leu Gln Arg His Thr Thr Leu Arg Ser Leu
            100   105   110
Thr Pro Ile Lys Val Phe Leu His Pro Glu Asp Leu Lys Thr Leu Thr
        115   120   125
Asp Trp Ile Ser Thr His Glu Leu Pro Met Ile Lys His Ala Glu Phe
    130   135   140
Phe Pro Asp Thr Ser Cys Arg Arg Ser Gly Phe Lys Ile Glu Thr Pro
145   150   155   160
Asn Gly Ile Leu Arg Gln Glu Ile Ser Glu Glu Leu Asp His Leu Leu
                165   170   175
Ser Val Leu Thr Ala
            180

<210> 862
<211> 344
<212> PRT
<213> Chlamydia pneumoniae

<400> 862
Arg Thr Leu Val Phe Phe Gln Asn Leu Ala Lys Lys Leu Thr Ala Leu
1   5   10   15
Gly Ile Ser Pro Leu Gly Cys Leu Leu Ile Gly Gly Val Val Ser Cys
            20   25   30
Ala Ile Leu Phe Gly Arg Ser Ser Asn Pro Ser Leu Ala Pro Thr Gln
        35   40   45
Val Lys Thr Glu Lys Thr Ser Gly Asn Trp Leu Lys Leu Thr Gln Met
    50   55   60
Gly Asn Pro Lys Leu Ile Glu Ser Leu Thr Lys Lys Glu Gln Leu Glu
65   70   75   80
Lys Asp Leu Thr Ser Phe His Pro Ile Ala Ser Ala Lys Val Ala Ile
                85   90   95
Ala Leu Ser Thr Glu Asp Asp Val Met Ser Pro Leu His Leu Ser Val
            100   105   110
Ile Leu Thr Leu Arg Lys Glu Glu Ser Leu Thr Pro Ser Leu Leu Phe
        115   120   125
Ser Ile Thr Asp Tyr Leu Cys Ser Ser Leu Pro Gly Leu Lys Arg Glu
    130   135   140
His Ile Ser Leu Ser Asp Asn Leu Gly Asn Leu Tyr Ile Pro Glu Ser
145   150   155   160
Ile Thr Val Asn Ser Leu Phe Ile His Thr Leu Glu Asn Tyr Leu Gly
                165   170   175
Lys Ile Phe Pro Lys Glu His Phe Ala Leu Ala Tyr His Ala Lys Ala
            180   185   190

1075

Glu Lys Pro Thr Leu Gln Leu Thr Leu Asn Glu Asn Tyr Ile Ala His
195   200   205
Leu Thr Lys Glu Glu Ser Glu Lys Ile Val Ala His Thr Lys His Tyr
210   215   220
Leu Tyr Gln Asn Tyr Asp Asp Ser Tyr Asp Ile Val Ile Glu Thr Leu
225   230   235   240
Pro Phe Ala Arg Leu Gln Asn Lys Lys Ser Phe Pro Ala Lys Val Leu
                245   250   255
Ile Gly Ser Met Ile Leu Val Ile Ser Leu Met Ile Val Ala Leu Ala
                260   265   270
Ser Phe Tyr Leu Ala Arg His Ala Tyr Glu Arg Val Ser Pro Glu Pro
                275   280   285
Arg Lys Ile Lys Arg Gly Ile Asn Ile Ser Lys Leu Leu Glu Ile Ile
290   295   300
Gln Lys Glu Ser Pro Glu Lys Ile Ala Leu Ile Leu Ser Tyr Leu Asp
305   310   315   320
Pro Lys Lys Ala Glu Ala Leu Leu Asn Arg Leu Pro Glu Asp Leu Lys
                325   330   335
His Gln Val Leu Lys Tyr Lys Leu
                340

        <210> 863
        <211> 276
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 863
Ala Ser Tyr Pro Phe Thr Trp Lys Phe Leu Met Thr Leu Pro Leu Glu
1   5   10   15
Pro Met Ile Phe Trp Ser Ser Leu Ser Ala Lys Val Met Lys Lys Phe
                20   25   30
Leu Thr Pro His Cys Ala Gly Thr Phe Ser Glu Glu Asp Ala Glu Ala
        35   40   45
Lys Glu Ala His Leu Val Thr Gly Lys Gln Gly His Arg Leu Met Gly
        50   55   60
Asn Cys Val Thr Phe Tyr Trp Leu Val Asp Lys Lys Asn Gly Val Ile
65   70   75   80
Leu Asp Ala Lys Phe Gln Tyr Phe Gly His Pro Tyr Leu Ile Pro Leu
                85   90   95
Ala Glu Ala Val Cys Asn Leu Val Cys Gly Lys Ser Tyr Ser Glu Ala
                100   105   110
Tyr Lys Met Thr Leu Asp Asp Ile Asp Lys Ser Leu Arg Val His Ala
        115   120   125
His Gln Pro Ala Leu Pro Glu Asp Ser Ile Ser Leu Tyr His Phe Val
        130   135   140
Ile Asp Ala Leu Asp Thr Ala Val Glu Gln Cys Leu Glu Ile Pro Leu
145   150   155   160
Glu Asp Gly Ser Leu Pro Leu Gln Asn Ser Pro Met Asn Leu Asp Phe
                165   170   175
Glu Asp Ala Asn Pro Tyr Ser Gln Ser Asp Trp Glu Ala Leu Thr His
                180   185   190
Glu Gln Lys Leu Tyr Ala Leu Arg Ala Thr Ile Ala Glu Lys Ile Gly
                195   200   205
Pro Tyr Ile Ala Met Asp Gly Gly Glu Val Thr Val Glu Ser Leu Glu
        210   215   220
Asn Phe Ile Val Thr Ile Ala Tyr Ser Gly Asn Cys Ser Gly Cys Pro
225   230   235   240
Ser Ser Leu Gly Ser Thr Leu Asn Ser Ile Gly Gln Leu Leu Arg Ala
                245   250   255
Tyr Ile Tyr Pro Glu Leu Gln Val Lys Val Asp Glu Ser Ser Leu Asn
                260   265   270

1076

Leu Ser His Pro
        275

        <210> 864
        <211> 401
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 864
Gly Arg Gly Thr Ile Phe Arg Ile Thr Asp Gly Lys Thr Ser Cys Ile
 1   5   10   15
Ser Met Glu Lys Pro Gln Asn Arg Lys Ala Pro Arg Ile Phe Trp Leu
            20   25   30
Asn Asn Gln Val Ala Ile Pro Pro Ser Glu Arg Val Lys Glu Ser Tyr
            35   40   45
Ala Leu His Ser Asp Ile Phe Ser Leu Pro Pro Gly Ser Ala Leu Lys
        50   55   60
Leu Ala Glu Lys Thr Glu Glu Ser Ile Arg Gln Leu Val Gly Leu Lys
65   70   75   80
Asp Ser His Ile Phe Arg Phe Val Pro His Phe Pro His Val Val His
            85   90   95
Ile Val Leu Ala Ala Leu Val Glu Asn Leu Ser Met Phe Gln Gly Arg
            100   105   110
Asn His Ile Ile Leu Pro Ala His Asp Gln Gln Leu Leu Ile Asn Ser
            115   120   125
Leu Cys Arg His Gln Gly Leu Gly Thr Thr Tyr Asp Trp Val Thr Val
        130   135   140
Asn His Glu Gly Arg Ile Val Glu Glu Gln Leu Ile Glu Thr Leu Ser
145   150   155   160
Pro Arg Ser Leu Leu Phe Ser Leu Ser Ala Ala His Gly Leu Thr Gly
            165   170   175
Val Ile Gln Pro Leu Asp Pro Leu Leu Ser Leu Cys Lys Asp Arg Arg
            180   185   190
Ile Leu Leu His Leu Asp Ile Ser Asp Ile Leu Gly Arg Ala Pro Leu
        195   200   205
Thr Pro Glu Ile Leu Asn Ala Asp Ile Ile Thr Phe Ser Ser Ala Ala
        210   215   220
Leu Gly Gly Met Gly Ser Ile Gly Gly Ile Phe Ile Arg Lys Ser Leu
225   230   235   240
Glu Arg Val Phe Ser Ser Trp Phe Pro Pro His Thr Ser Ala Ser Leu
            245   250   255
Cys Phe Ser Ala Val Ala Ala Met Gln Thr Ala Cys Glu Glu Arg Ile
        260   265   270
Ser Ala Leu Pro Leu Phe Thr Phe His Thr Ser Asn Leu Cys Lys Lys
        275   280   285
Leu Ile Gln Glu Leu Gln Ser Val Leu Pro Ser Ile Gln Leu Ala Phe
        290   295   300
Ser Glu Val Gln Asn Arg Leu Pro Asn Ile Val Val Ala Ala Ile Pro
305   310   315   320
Asp Ile Pro Ala Glu Ser Leu Ala Phe His Leu His Gln Gln Gly Ile
                325   330   335
Tyr Pro Ser Leu Gly Tyr Glu Arg Phe Gln Pro Leu Ala Gln Val Leu
            340   345   350
Gln Asn Cys Gly Ile Ser Pro Phe Leu Cys His Ser Ala Leu His Phe
            355   360   365
Ser Leu Thr Glu Arg Ser Lys Asp Leu Glu Phe Ser Lys Leu Ala Arg
        370   375   380
Ala Met His Asp Ala Ile Lys His Leu Thr Pro Leu Leu Gly Ser Ser
385   390   395   400
Ser

1077

<210> 865
<211> 230
<212> PRT
<213> Chlamydia pneumoniae

<400> 865
```
Glu His Met Ala Leu Leu Ile Leu Leu Arg His Gly Gln Ser Val Trp
1               5                   10                  15
Asn Glu Lys Asn Leu Phe Ser Gly Trp Val Asp Ile Pro Leu Ser Gln
            20                  25                  30
Gln Gly Ile Glu Glu Ala Phe Ser Ala Gly Arg Ala Ile Gln Asn Leu
            35                  40                  45
Pro Ile Asp Cys Ile Phe Thr Ser Thr Leu Val Arg Ser Leu Met Thr
    50                  55                  60
Ala Leu Leu Ala Met Thr Asn His His Ser Lys Lys Ile Pro Tyr Ile
65                  70                  75                  80
Val His Glu Asp Pro Lys Ala Lys Glu Met Ser Arg Ile Tyr Ser Ala
                85                  90                  95
Glu Glu Glu Asn Asn Met Ile Pro Leu Tyr Gln Ser Ser Ala Leu Asn
            100                 105                 110
Glu Arg Met Tyr Gly Glu Leu Gln Gly Lys Asn Lys Lys Gln Thr Ala
            115                 120                 125
Glu Gln Phe Gly Glu Glu Arg Val Lys Leu Trp Arg Arg Ser Tyr Lys
    130                 135                 140
Thr Ala Pro Pro Gln Gly Glu Ser Leu Tyr Asp Thr Lys Gln Arg Thr
145                 150                 155                 160
Leu Pro Tyr Phe Glu Lys Asn Ile Leu Pro Gln Leu Gln Asn Gly Lys
            165                 170                 175
Asn Val Phe Val Ser Ala His Gly Asn Ser Leu Arg Ser Leu Ile Met
            180                 185                 190
Asp Leu Glu Lys Leu Ser Glu Glu Glu Val Leu Ser Leu Glu Leu Pro
    195                 200                 205
Thr Gly Lys Pro Val Val Tyr Gln Trp Lys Asn His Lys Ile Glu Lys
    210                 215                 220
His Pro Glu Phe Phe Gly
225                 230
```

<210> 866
<211> 239
<212> PRT
<213> Chlamydia pneumoniae

<400> 866
```
Tyr Gly Val Asn Val Thr Lys Val Arg Leu Asn Lys Phe Leu Ala Ser
1               5                   10                  15
Ala Gly Val Ala Ser Arg Arg Lys Cys Asp Glu Ile Ile Phe Ser Gly
            20                  25                  30
Ser Val Thr Val Asn Gly Arg Val Ala Glu Gly Pro Phe Val Leu Val
            35                  40                  45
Asp Pro Glu Asp Lys Val Gln Val Gly Gly Thr Ser Val His Leu Thr
    50                  55                  60
Lys Lys Val Tyr Phe Met Val His Lys Ala Ile Gly Tyr Leu Cys Ser
65                  70                  75                  80
Ser Glu Lys Lys Phe Pro Gly Thr Lys Leu Val Ile Asp Leu Phe Ala
            85                  90                  95
His Leu Pro Tyr Arg Val Phe Thr Val Gly Arg Leu Asp Lys Glu Thr
            100                 105                 110
Ser Gly Leu Ile Leu Val Thr Asn Asp Gly Glu Phe Ala Asn Lys Ile
            115                 120                 125
Ile His Pro Ser Ser Gly Ile Thr Lys Glu Tyr Leu Leu Lys Val Ser
    130                 135                 140
```

Arg Asp Val Ser Ala Lys Asp Leu Gly Lys Leu Met Glu Gly Thr Phe
145   150   155   160
Ile Asp Gly Lys His Val Arg Pro Val Ser Val Thr Lys Ile Arg Arg
                165   170   175
Gly Thr Val Lys Ile Val Val Ser Glu Gly Lys Lys His Glu Ile Arg
                180   185   190
Leu Phe Ala Asp Ala Ala Gly Phe Pro Ile Leu Glu Leu Lys Arg Ile
            195   200   205
Arg Ile Gly Ser Leu Val Leu Gly Gly Leu Arg Tyr Gly Glu Tyr Arg
        210   215   220
Glu Leu Thr Asp Ala Glu Leu Gly Thr Tyr Met Lys Leu Ser Asp
225   230   235

        <210> 867
        <211> 177
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 867
Ser Pro Met Gly Tyr Val Phe Tyr Val Ile Ala Gly Ser Ile Phe Leu
1   5   10   15
Gly Ile Ser Leu Gly Ala Tyr Cys Gln Leu Tyr Tyr Ser Val Lys Ser
            20   25   30
Val Leu Phe Ser Trp Tyr Leu Leu Thr Val Tyr Ala Leu Glu Lys Arg
            35   40   45
His Ala Leu Leu Ala Leu Ser Gln Leu Val Gly Glu Glu Asp Ala Gln
        50   55   60
Ser Gln Lys Glu Ile Asp Phe Leu Ser Gln Cys Asp Lys Leu Ser Trp
65   70   75   80
Arg Ala Phe Leu Lys Asn Ser Tyr Glu Ile Ile Pro Thr Phe Lys Glu
            85   90   95
Met Glu Asp Leu Leu Ser Glu Arg Val Gln Gly Phe Leu Glu Ser Ile
        100   105   110
Glu Thr Ile Ala Glu His Asp Arg Ala Ile Leu Cys Ile Glu Asn Phe
        115   120   125
Trp Ala Ser Lys Asn Leu Phe Asp Phe Glu Ile Ala Ala Tyr Glu Glu
        130   135   140
Ala Val Glu Lys Tyr Leu Lys Leu Arg Gln Arg Ala Pro Leu Arg Leu
145   150   155   160
Ala Ser Lys Leu Phe Arg Phe Leu Asp Val Pro Ser Ile Arg Phe Ser
            165   170   175
Ser

        <210> 868
        <211> 193
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 868
Asn Met Lys Val Ile Tyr Tyr Glu Ile Glu Glu Ile Pro Ser Thr Asn
1   5   10   15
Thr Met Ala Lys Ser Tyr Met His Leu Trp Asp Pro Tyr Ala Leu Thr
            20   25   30
Val Ile Ser Thr Lys Cys Gln Thr Ala Gly Thr Gly Lys Phe Gly Lys
            35   40   45
Ser Trp Lys Ser Ser Lys Gly Asp Leu Leu Asn Thr Phe Cys Phe Phe
        50   55   60
Ile Thr Asp Leu His Ile Asp Val Ser Arg Leu Phe Arg Leu Gly Thr
65   70   75   80

1079

```
Glu Ala Val Val Ala Leu Cys Lys Asp Leu Gly Ile Thr Glu Ala Lys
                85                      90                      95
Ile Lys Trp Pro Asn Asp Val Leu Val His Gly Glu Lys Leu Cys Gly
               100                     105                     110
Val Leu Pro Glu Thr Leu Pro Val Glu Gly Leu Leu Gly Val Val Leu
               115                     120                     125
Gly Ile Gly Leu Asn Gly Asn Thr Thr Lys Gln Ala Leu Lys Asp Val
       130                     135                     140
Gly Gln Pro Ala Thr Ser Leu Gln Glu Ile Leu Gly His Pro Ile Asp
145                     150                     155                     160
Leu Glu Thr Thr Arg Glu Leu Leu Ile His His Leu Leu Gly Val Leu
               165                     170                     175
Gln Glu Asn Leu Pro Asp Ser Leu Ala Thr Lys Ser Asn Arg Gly Asn
               180                     185                     190
Ile
```

```
Cys Ile Arg Ile Pro Gln Met His Ile Gly Phe Cys His Cys Val Arg
1                5                      10                      15
Gly Gly Asn Phe Phe Tyr Phe Val Ile Asn Asn Phe His Ile Leu Glu
               20                      25                      30
Ile Tyr Ser Leu Leu Asn Ser Asn Thr Ile Met Arg Tyr His Lys Tyr
       35                      40                      45
Phe Arg Tyr Val Asn Ser Trp Val Phe Leu Val Val Leu Thr Leu Met
   50                      55                      60
Leu Leu Ser Val Val Val Ile Ser Ser Met Asp Pro Thr Ala Met Leu
65                      70                      75                      80
Val Thr Ser Ser Lys Gly Leu Leu Thr Asn Lys Ser Ile Met Gln Leu
               85                      90                      95
Arg His Phe Ala Leu Gly Trp Val Val Phe Phe Ile Cys Ala Tyr Phe
               100                     105                     110
Asp Tyr His Leu Phe Lys Arg Trp Ala Trp Val Leu Tyr Phe Phe Met
       115                     120                     125
Ile Cys Ala Leu Val Gly Leu Phe Phe Val Pro Ser Val Gln Asn Val
       130                     135                     140
His Arg Trp Tyr Arg Ile Pro Phe Ile His Met Ser Val Gln Pro Ser
145                     150                     155                     160
Glu Tyr Gly Lys Leu Val Ile Val Ile Met Leu Ser Tyr Ile Leu Glu
               165                     170                     175
Ser Arg Lys Ala Asp Ile Thr Ser Lys Thr Thr Ala Phe Leu Ala Cys
               180                     185                     190
Leu Val Val Ala Leu Pro Phe Phe Leu Ile Leu Lys Glu Pro Asp Leu
       195                     200                     205
Gly Thr Ala Leu Val Leu Cys Pro Val Thr Leu Thr Ile Phe Tyr Leu
       210                     215                     220
Ser Asn Val His Ser Leu Leu Val Lys Phe Cys Thr Val Val Ala Thr
225                     230                     235                     240
Ile Gly Ile Ile Gly Ser Leu Leu Ile Phe Ser Gly Ile Val Ser His
               245                     250                     255
Gln Lys Val Lys Pro Tyr Ala Leu Lys Val Ile Lys Glu Tyr Gln Tyr
               260                     265                     270
Glu Arg Leu Ser Pro Ser Asn His His Gln Arg Ala Ser Leu Ile Ser
       275                     280                     285
Ile Gly Leu Gly Gly Ile Arg Gly Arg Gly Trp Lys Thr Gly Glu Phe
       290                     295                     300
```

```
Ala Gly Arg Gly Trp Leu Pro Tyr Gly Tyr Thr Asp Ser Val Phe Ser
305                 310                 315                 320
Ala Leu Gly Glu Glu Phe Gly Leu Leu Gly Leu Leu Phe Thr Leu Gly
                325                 330                 335
Leu Phe Tyr Cys Leu Ile Cys Phe Gly Cys Arg Thr Val Ala Val Ala
                340             345                 350
Thr Asp Asp Phe Gly Lys Leu Leu Ala Ala Gly Ile Thr Val Tyr Leu
                355                 360                 365
Ala Met His Val Leu Ile Asn Ile Ser Met Met Cys Gly Leu Leu Pro
        370                 375                 380
Ile Thr Gly Val Pro Leu Ile Leu Ile Ser Tyr Gly Gly Ser Ser Val
385                 390                 395                 400
Ile Ser Thr Met Ala Ser Leu Gly Val Leu Gln Ser Ile Tyr Ser His
                405                 410                 415
Arg Phe Ala Lys Tyr
            420
```

<210> 870
<211> 688
<212> PRT
<213> Chlamydia pneumoniae

<400> 870
```
Asn Phe Arg Asn Gly Leu Gly Val Arg Asp Leu His His Phe Arg Glu
1               5                   10                  15
Tyr Tyr Leu Ile Ile Asn Glu Ile Ile Ile Thr Gly Arg Tyr Val Phe
                20                  25                  30
Ser Arg Leu Phe Phe Thr Ser Phe Ser Ala Glu Val Val Asn Thr Phe
                35                  40                  45
Phe Glu Ser Gly Met Ser Glu Asp Thr Ser Pro Leu Leu Ser Lys Gln
        50                  55                  60
Asn Arg Lys Leu Ser His Asn Leu Pro Leu Lys Ser Ala Tyr Leu Ser
65                  70                  75                  80
Leu Gly Thr Tyr Leu Ile Ala Leu Leu Ser Phe Trp Leu His Ala Lys
                85                  90                  95
Asn Leu Ser Asn Leu Phe Val Val Phe Thr Phe Phe Leu Ala Gly Thr
                100                 105                 110
Pro Ala Leu Ile Lys Ser Leu Asp Asn Ile Cys Gln Lys Val Val Asn
        115                 120                 125
Ile Asp Ile Leu Met Thr Ser Ala Ala Phe Gly Ser Ile Phe Ile Gly
        130                 135                 140
Gly Ala Leu Glu Gly Ala Leu Leu Leu Val Leu Phe Ala Ile Ser Glu
145                 150                 155                 160
Ala Leu Gly Gln Met Val Ser Gly Lys Ala Lys Ser Thr Leu Val Ser
                165                 170                 175
Leu Lys Gln Leu Ala Pro Thr Thr Gly Trp Leu Val Leu Glu Asp Gly
                180                 185                 190
Asn Leu Gln Lys Val Ala Ile Asn Lys Ile Glu Val Gly Asn Ile Leu
        195                 200                 205
Arg Ile Lys Ser Gly Glu Val Pro Leu Asp Gly Glu Ile Leu His
210                 215                 220
Gly Ser Ser Ser Ile Asn Leu Met His Leu Thr Gly Glu Lys Val Pro
225                 230                 235                 240
Lys Ser Cys His Pro Gly Ser Ile Val Pro Ala Gly Ala His Asn Met
                245                 250                 255
Glu Gly Ser Phe Asp Leu Arg Val Leu Arg Thr Gly Ser Asp Ser Thr
                260                 265                 270
Ile Ala His Ile Ile Asn Leu Val Ile Gln Ala Gln Asn Ser Lys Pro
        275                 280                 285
Arg Leu Gln Gln Arg Leu Asp Lys Tyr Ser Ser Val Tyr Ala Leu Ser
        290                 295                 300
```

```
Ile Phe Ala Ile Ala Cys Gly Ile Ala Leu Leu Val Pro Leu Phe Thr
305                 310                 315                 320
Ser Ile Pro Leu Leu Gly Pro Gln Ser Ala Phe Tyr Arg Ala Leu Ala
            325                 330                 335
Phe Leu Ile Ala Ala Ser Pro Cys Ala Leu Ile Ile Ala Ile Pro Ile
            340                 345                 350
Ala Tyr Leu Ser Ala Ile Asn Ala Cys Ala Lys His Gly Val Leu Leu
            355                 360                 365
Lys Gly Gly Val Ile Leu Asp Arg Leu Val Ser Cys Asn Ser Val Val
    370                 375                 380
Met Asp Lys Thr Gly Thr Leu Thr Thr Gly Glu Leu Thr Cys Ile Gly
385                 390                 395                 400
Cys Asp Tyr Phe Gly Ser Lys Asn Glu Thr Phe Phe Pro Ser Val Leu
            405                 410                 415
Ala Leu Glu Gln Ser Ser Ser His Pro Ile Ala Glu Ala Ile Val Ser
            420                 425                 430
Tyr Leu Met Glu Gln Lys Val Ser Ser Leu Pro Ala Asp Arg Tyr Leu
            435                 440                 445
Thr Val Pro Gly Glu Gly Val Arg Gly Tyr Phe Asn Glu Gln Glu Ala
    450                 455                 460
Phe Val Gly Arg Val Glu Thr Gly Leu Gly Lys Val Pro Ser Glu Tyr
465                 470                 475                 480
Leu Glu Asp Ile Glu Gln Lys Ile Tyr Gln Ala Lys Gln His Gly Glu
            485                 490                 495
Ile Cys Ser Leu Ala Tyr Val Gly Asn Ser Phe Ala Leu Phe Tyr Phe
            500                 505                 510
Arg Asp Ile Pro Arg Pro Gln Ala Lys Glu Ile Ile Gln Asp Leu Lys
            515                 520                 525
Asp Leu Gly Tyr Pro Val Ser Met Leu Thr Gly Asp His Lys Val Ser
    530                 535                 540
Ala Glu Asn Thr Ala Glu Ile Leu Gly Ile Ser Glu Val Phe Phe Asp
545                 550                 555                 560
Leu Thr Pro Glu Asp Lys Leu Ala Lys Ile Arg Glu Leu Ala Thr Gln
            565                 570                 575
Arg Gln Ile Met Met Val Gly Asp Gly Ile Asn Asp Ala Pro Ala Leu
            580                 585                 590
Ala Gln Ala Thr Val Gly Ile Ala Met Gly Glu Ala Gly Ser Ala Thr
    595                 600                 605
Ala Ile Glu Ala Ala Asp Ile Val Leu Leu His Asp Ser Leu Ser Ser
    610                 615                 620
Leu Pro Trp Ile Ile Gln Lys Ala Lys Gln Thr Lys Lys Val Val Ser
625                 630                 635                 640
Gln Asn Leu Ala Leu Ala Leu Ala Ile Ile Leu Leu Val Ser Trp Pro
            645                 650                 655
Ala Ser Leu Gly Ile Ile Pro Leu Trp Leu Ala Val Ile Leu His Glu
            660                 665                 670
Gly Ser Thr Val Ile Val Gly Leu Asn Ala Leu Arg Leu Leu Lys Ser
    675                 680                 685
```

        <210> 871
        <211> 274
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 871
```
Glu Gly Trp Arg Phe Phe Phe Pro Lys Thr Ser Glu Asn Thr Ser Asp
1               5                   10                  15
Cys Arg Gln His Gln Ile Leu Arg Lys Ile Met Thr Gln Asp Pro His
            20                  25                  30
Asp His Phe Lys Ser Arg Thr Pro Glu Asp His Ile Lys His Val Arg
    35                  40                  45
```

```
Asp Lys His Arg Val Cys Lys Gly Glu Pro His Thr Thr Phe Lys Gly
    50                  55              60
Phe Phe Tyr His Leu Ala Asn Asn Ala Leu Ser Thr Gly Val Phe Ile
65              70              75                      80
Phe Phe Ile Arg Thr Leu Phe Phe Leu Ile Pro Thr Asn Arg Ala Leu
                85              90                  95
Gln Val Lys Ser Leu Ile Ser Leu Gly Val Gly Trp Thr Phe Tyr His
            100             105             110
Gly Cys Leu Lys Ala Arg Lys Ala Trp Ala Tyr Met Glu Leu Ser His
            115             120             125
Arg Ser Met Leu Glu Glu Lys Asn Glu Ile Glu Glu Asn Phe Glu Gln
    130             135             140
Glu Lys Ile Glu Leu Arg Ile Leu Phe Glu Asn Gln Gly Phe Lys Asp
145             150             155                     160
Pro Leu Leu Gln Glu Met Val Glu Tyr Val Cys Ser Asp Ser Thr Leu
            165             170             175
Leu Leu Asp Thr Met Ile Arg Glu Glu Leu Tyr Ile Arg Lys Glu Asp
            180             185             190
Leu Pro His Pro Leu Ile Gln Gly Gly Ser Arg Ile Leu Gly Gly Leu
    195             200             205
Cys Gly Leu Ala Ile Phe Leu Pro Leu Val Leu Cys Ile Ser Tyr Thr
    210             215             220
Leu Ala Gly Val Phe Ser Ala Leu Met Val Leu Val Leu Ser Phe Leu
225             230             235                     240
Lys Ala Lys Ile Leu Lys Asn Asp Lys Ile Ser Glu Met Val Trp Val
            245             250             255
Leu Gly Ile Phe Ile Thr Ser Ala Ser Ile Ile Ser Ser Leu Met Lys
            260             265             270
Leu Leu


        <210> 872
        <211> 478
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 872
Thr Thr Thr His Pro Thr Gln Gly Phe Gly Gly Ala Val Ile Leu Pro
1               5               10                      15
Phe Ser Pro Ile Ser Ile Ala Arg Arg Ile Lys Lys Ser Cys Cys Ser
            20              25              30
Glu Lys Ser Ser Ile Tyr Ser His Phe Cys Thr Leu Leu Leu Asn Asn
        35              40              45
Glu Thr Ser Met Leu Asp Ile Lys Ile Ile Arg Lys Thr Pro Glu Glu
    50              55              60
Cys Glu Thr Arg Leu Arg Lys Lys Asp Pro Lys Ile Ser Leu Glu Pro
65              70              75                      80
Val Leu Ser Leu Asp Lys Glu Val Arg Gln Leu Lys Thr Asp Ser Glu
            85              90              95
Thr Leu Gln Ala Gln Arg Arg Leu Leu Ser Gln Asp Ile His Lys Ala
            100             105             110
Lys Thr Gln Gly Val Asp Ala Thr Asn Leu Ile Gln Glu Val Glu Thr
    115             120             125
Leu Ala Ala Asp Leu Glu Lys Ile Glu Gln His Leu Asp Gln Lys Asn
    130             135             140
Ala Gln Leu His Glu Leu Leu Ser His Leu Pro Asn Tyr Pro Ala Asp
145             150             155                     160
Asp Ile Pro Val Ser Glu Asp Lys Ala Gly Asn Gln Val Ile Lys Ser
            165             170             175
Val Gly Asp Leu Pro Ile Phe Ser Phe Pro Pro Lys His His Leu Glu
            180             185             190
```

```
Leu Asn Gln Glu Leu Asp Ile Leu Asp Phe Gln Ala Ala Ala Lys Thr
        195                 200                 205
Thr Gly Ser Gly Trp Pro Ala Tyr Lys Asn Arg Gly Val Leu Leu Glu
        210                 215                 220
Trp Ala Leu Leu Thr Tyr Met Leu Gln Lys Gln Ala Ala His Gly Phe
225                 230                 235                     240
Gln Leu Trp Leu Pro Pro Leu Leu Val Lys Lys Glu Ile Leu Phe Gly
                245                 250                 255
Ser Gly Gln Ile Pro Lys Phe Asp Gly Gln Tyr Tyr Arg Val Glu Asp
                260                 265                 270
Gly Glu Gln Tyr Leu Tyr Leu Ile Pro Thr Ala Glu Val Val Leu Asn
        275                 280                 285
Gly Phe Arg Ser Gln Asp Ile Leu Thr Glu Lys Glu Leu Pro Leu Tyr
        290                 295                 300
Tyr Ala Ala Cys Thr Pro Cys Phe Arg Arg Glu Ala Gly Ala Ala Gly
305                 310                 315                     320
Ala Gln Glu Arg Gly Leu Val Arg Val His Gln Phe His Lys Val Glu
                325                 330                 335
Met Phe Ala Phe Thr Thr Pro Asn Gln Asp Asp Ile Ala Tyr Glu Lys
        340                 345                 350
Met Leu Ser Ile Val Glu Glu Met Leu Thr Glu Leu Lys Leu Pro Tyr
        355                 360                 365
Arg Leu Ser Leu Leu Ser Thr Gly Asp Met Ser Phe Thr Ala Ser Lys
        370                 375                 380
Thr Ile Asp Ala Glu Val Trp Leu Pro Gly Gln Lys Ala Phe Tyr Glu
385                 390                 395                     400
Val Ser Ser Ile Ser Gln Cys Thr Asp Phe Gln Ser Arg Arg Ser Gly
                405                 410                 415
Thr Arg Tyr Lys Asp Ser Gln Gly Lys Leu Gln Phe Val His Thr Leu
        420                 425                 430
Asn Gly Ser Gly Leu Ala Thr Pro Arg Leu Leu Val Ala Ile Leu Glu
        435                 440                 445
Asn Asn Gln Gln Ala Asp Gly Ser Val Val Ile Pro Glu Val Leu Arg
        450                 455                 460
Pro Tyr Leu Gly Gly Leu Glu Ile Leu Leu Pro Lys Asp Gln
465                 470                 475
```

        <210> 873
        <211> 378
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 873
```
Glu Tyr Met Glu Asp Phe Ser Glu Gln Gln Leu Phe Phe Met Arg Arg
1                   5                   10                  15
Ala Ile Glu Ile Gly Glu Lys Gly Arg Ile Thr Ala Pro Pro Asn Pro
        20                  25                  30
Trp Val Gly Cys Val Val Val Gln Glu Asn Arg Ile Ile Gly Glu Gly
        35                  40                  45
Phe His Ala Tyr Ala Gly Gly Pro His Ala Glu Glu Leu Ala Ile Gln
    50                  55                  60
Asn Ala Ser Met Pro Ile Ser Gly Ser Asp Val Tyr Val Ser Leu Glu
65                  70                  75                      80
Pro Cys Ser His Phe Gly Ser Cys Pro Pro Cys Ala Asn Leu Leu Ile
                85                  90                  95
Lys His Lys Val Ser Arg Val Phe Val Ala Leu Val Asp Pro Asp Pro
        100                 105                 110
Lys Val Ala Gly Gln Gly Ile Ala Met Leu Arg Gln Ala Gly Ile Gln
        115                 120                 125
Val Tyr Val Gly Ile Gly Glu Ser Glu Ala Gln Ala Ser Leu Gln Pro
        130                 135                 140
```

1084

Tyr Leu Tyr Gln Arg Thr His Asn Phe Pro Trp Thr Ile Leu Lys Ser
145   150   155   160
Ala Ala Ser Val Asp Gly Gln Val Ala Asp Ser Gln Gly Lys Ser Gln
                165   170   175
Trp Ile Thr Cys Pro Glu Ala Arg His Asp Val Gly Lys Leu Arg Ala
                180   185   190
Glu Ser Gln Ala Ile Leu Val Gly Ser Arg Thr Val Leu Ser Asp Asp
                195   200   205
Pro Trp Leu Thr Ala Arg Gln Pro Gln Gly Met Leu Tyr Pro Lys Gln
        210   215   220
Pro Leu Arg Val Val Leu Asp Ser Arg Gly Ser Val Pro Pro Thr Ser
225   230   235   240
Lys Val Phe Asp Lys Thr Ser Pro Thr Leu Tyr Val Thr Thr Glu Arg
                245   250   255
Cys Pro Glu Asn Tyr Ile Lys Val Leu Asp Ser Leu Asp Val Pro Val
                260   265   270
Leu Leu Thr Glu Ser Thr Pro Ser Gly Val Asp Leu His Lys Val Tyr
                275   280   285
Glu Tyr Leu Ala Gln Lys Lys Ile Leu Gln Val Leu Val Glu Gly Gly
        290   295   300
Thr Thr Leu His Thr Ser Leu Leu Lys Glu Arg Phe Val Asn Ser Leu
305   310   315   320
Val Leu Tyr Ser Gly Pro Met Ile Leu Gly Asp Gln Lys Arg Pro Leu
                325   330   335
Val Gly Val Leu Gly Asn Leu Leu Glu Ser Ala Ser Pro Leu Thr Leu
                340   345   350
Lys Ser Ser Gln Ile Leu Gly Asn Ser Leu Lys Val Val Trp Glu Ile
        355   360   365
Ser Pro Gln Val Phe Glu Pro Ile Arg Asn
        370   375

        <210> 874
        <211> 438
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 874
Lys Glu Arg Ile Phe Arg Val Ala Cys Leu Ala Ser Glu Ser Val Asn
1   5   10   15
Ala Arg Glu Ser Met Ile Glu Thr Arg Glu Glu Val Gly Ser Ala Asn
                20   25   30
Phe Val Ser Leu Glu Arg Ala Ile Glu Asp Leu Arg Ala Gly Lys Phe
                35   40   45
Val Ile Val Val Asp Glu Ala Ser Arg Glu Asp Glu Gly Asp Leu Ile
        50   55   60
Ile Ala Gly Glu Lys Ile Thr Val Glu Lys Met Thr Phe Leu Leu Gln
65   70   75   80
His Thr Thr Gly Val Val Cys Ala Ala Leu Ser Gln Glu Arg Leu Leu
                85   90   95
Ser Leu Asp Leu Pro Pro Met Val Lys Asp Asn Arg Cys Arg Phe Lys
                100   105   110
Thr Pro Phe Thr Val Ser Val Asp Ala Ala His Gly Val Thr Thr Gly
                115   120   125
Val Ser Ala Ala Asp Arg Thr Lys Val Val Gln Leu Leu Ala Asp Pro
        130   135   140
Lys Ser Lys Pro Glu Asp Phe Ile Ser Pro Gly His Phe Phe Pro Leu
145   150   155   160
Ala Ser Ser Pro Gly Gly Val Leu Lys Arg Ala Gly His Thr Glu Ser
                165   170   175
Thr Val Asp Leu Met Glu Leu Ala Gly Leu Gln Pro Cys Gly Val Leu
                180   185   190

1085

```
Ala Glu Leu Val Asn Glu Asp Tyr Ser Met Met Arg Leu Pro Gln Ile
        195                 200                 205
Leu Glu Phe Ala Arg Lys His Asn Ile Ala Val Ile Pro Val Thr Ser
        210                 215                 220
Ile Ile Ala His Arg Met Leu Ser Asp Arg Leu Val Ser Lys Ile Ser
225                 230             235                     240
Ser Ala Arg Leu Pro Thr Ile Tyr Gly Asp Phe Thr Ile His Val Tyr
                245                 250                 255
Glu Ser Leu Leu Glu Gly Met Gln His Leu Ala Leu Val Lys Gly Asn
                260                 265                 270
Val Ala Gly Lys Ser Asn Val Leu Val Arg Val His Ser Glu Cys Val
                275                 280                 285
Thr Gly Asp Ile Leu Gly Ser Lys Arg Cys Asp Cys Gly Glu Gln Leu
        290                 295                 300
Ser Ser Ala Met Ser Tyr Ile Ala Glu Lys Gly Thr Gly Val Leu Val
305                 310                 315                 320
Tyr Leu Arg Gly Gln Glu Gly Arg Gly Ile Gly Leu Gly His Lys Val
                325                 330                 335
Arg Ala Tyr Ala Leu Gln Asp Asn Gly Tyr Asp Thr Val Asp Ala Asn
        340                 345                 350
Leu Ala Met Gly Phe Pro Val Asp Ser Arg Glu Tyr Gly Ile Gly Ala
        355                 360                 365
Gln Ile Leu Val Asp Leu Lys Leu Thr Thr Ile Lys Leu Ile Thr His
        370                 375                 380
Asn Pro Gln Lys Tyr Phe Gly Leu Gln Gly Phe Gly Leu Ser Ile Thr
385                 390                 395                 400
Glu Arg Val Pro Leu Pro Val Arg Ile Ser Glu Asp Asn Glu Gln Tyr
                405                 410                 415
Leu Arg Thr Lys Gln Glu Arg Met Gly His Trp Leu Asp Leu Pro Cys
                420                 425                 430
Cys Asn Asn Arg Val Gln
        435


        <210> 875
        <211> 169
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 875
Ile Ser His Ala Val Thr Ile Gly Tyr Asn Asn Phe Glu Glu Tyr Met
1                 5                 10                  15
Lys Thr Leu Lys Gly His Leu Ser Ala Lys Asn Leu Arg Ile Ala Ile
                20                  25                  30
Val Gly Ser Cys Phe Asn Gln Ala Met Ala Asp Ala Leu Val Ser Gly
                35                  40                  45
Thr Gln Glu Thr Phe Leu Lys Phe Gly Gly Ser Glu Asp Gly Leu Met
        50                  55                  60
Thr Ile Arg Val Pro Gly Ala Phe Glu Ile Pro Cys Thr Ile Lys Lys
65                  70                  75                  80
Leu Leu Ser Ser Glu Arg Lys Phe Asp Ala Ile Val Ala Cys Gly Val
                85                  90                  95
Leu Ile Gln Gly Glu Thr Asp His Tyr Asn Gln Ile Val Asn Gln Val
            100                 105                 110
Ala Ala Gly Ile Gly Ala Leu Ser Leu Glu Phe Cys Leu Pro Ile Thr
        115                 120                 125
Leu Ser Ile Val Ala Ala Pro Ser Ala Glu Ile Ala Trp Gln Arg Ser
        130                 135                 140
Gly Ile Lys Gly Arg His Leu Gly Val Ser Gly Met Thr Thr Ala Ile
145                 150                 155                 160
Glu Met Ala Thr Leu Phe Thr Gln Ile
                165
```

<210> 876
<211> 472
<212> PRT
<213> Chlamydia pneumoniae

<400> 876

```
Leu Ile Ser Leu Asn Leu Lys Ile Leu Thr Lys Gln Arg Asp Arg Glu
1               5                   10                  15
Glu Ala Ser Met Leu Lys Ile Leu Lys Ile Lys Val Leu Val Phe Pro
                20                  25                  30
Leu Ala Leu Leu Met Gly Cys Asn Ser Ile Gly Tyr Ala Gly Pro Gln
            35                  40                  45
Gly Ser Leu Gln Thr Asn Ser Gln Thr Lys Val Lys Ile Gly Ser Glu
        50                  55                  60
Val Trp Ile Glu Gln Lys Leu Arg Gln Tyr Pro Glu Leu Leu Trp Leu
65                  70                  75                  80
Thr Glu Ser Gly Gly Ala Pro Leu Leu Thr Ser Thr Pro Ile Asp Met
                85                  90                  95
Ala Tyr Ser Glu Lys Leu Phe Asn Lys Lys Val Pro Ala Leu Asp Ile
                100                 105                 110
Ala Ile Arg Ser Met Ile His Leu His Leu Leu Ile Gln Gly Ser Arg
            115                 120                 125
Gln Ser Tyr Met Gln Leu Ser Gln Ile Leu Pro Ser Glu Glu Gly Gly
        130                 135                 140
Met Thr Phe Lys Gln Phe Gln Thr Ala His Lys Gln Leu Leu Phe Phe
145                 150                 155                 160
Leu Asn Ser Pro Lys Ser Phe Asp Asn Thr Leu Arg Ile Leu Glu Thr
                165                 170                 175
Ala Ile Val Leu Arg His Val Gly Cys Ser Ala Lys Ala Val Thr Thr
                180                 185                 190
Phe Lys Pro Tyr Phe Thr Asp Ser Cys Pro Gln Ser Phe Tyr Ala Lys
            195                 200                 205
Ala Leu His Val Leu Arg Thr Phe Pro Glu Leu Cys Pro Ser Tyr Ala
    210                 215                 220
Arg Leu Ser Pro Glu Gln Gln Glu Val Leu Leu Ser Leu Arg Arg Leu
225                 230                 235                 240
Gly Asn Tyr Asp Ser Leu Leu Asn Leu Thr Glu Val Pro Ser Ala Gln
                245                 250                 255
Leu Leu Ser Ala Trp Arg Thr Arg Arg Ser Leu Ala Ile Leu Asp Leu
            260                 265                 270
Tyr Leu Tyr Cys Leu Asp Thr Cys Gly Asp Lys Asn Cys Ser Gln Glu
        275                 280                 285
Phe Tyr Ile Asn Phe Ala Pro Leu Leu Ser Met Leu Gln Gln His Ala
    290                 295                 300
Thr Ile Glu Glu Ala Phe Ser Arg Tyr Phe Thr Tyr Arg Ala Asn Arg
305                 310                 315                 320
Leu Gly Phe Glu Gly Thr Ser Arg Thr Asp Met Thr Leu Val Arg Leu
                325                 330                 335
Ala Thr Leu Met Asn Leu Ser Pro Ser Glu Ala Ser Thr Leu Ala Trp
            340                 345                 350
Ser Phe Lys Asn Leu Pro Ser Asp Glu Ala Glu Asn Leu Val Asn Ser
        355                 360                 365
Phe Tyr Thr Val Gln Gly Glu His Ile Pro Leu Thr Phe Arg Gly Leu
    370                 375                 380
Pro Ser Leu Val Ala Gly Leu Ser Val Ala Thr His Gly Ser Thr Val
385                 390                 395                 400
Ser Pro Glu Asn Arg Leu Arg Gln Leu Tyr Ser Thr Met Leu Ser Leu
                405                 410                 415
Leu Val Lys Ser Leu Arg Ser His Arg Glu Met Leu Asn Lys Gln Leu
            420                 425                 430
```

```
Leu Pro Gln Gly Thr Val Leu Asp Phe Ser Glu Thr Thr Leu Ser Ser
        435             440             445
Gly Gly Leu Asp Val Phe Ala Glu Ser Ile Ala Val Arg Ile His Leu
        450             455             460
Asn Gly Ala Val Ser Ile Asn Leu
465             470
```

```
        <210> 877
        <211> 220
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 877
Leu Lys Ile Met Lys Arg Val Ile Tyr Lys Thr Ile Phe Cys Gly Leu
1               5               10              15
Thr Leu Leu Thr Ser Leu Ser Ser Cys Ser Leu Asp Pro Lys Gly Tyr
                20              25              30
Asn Leu Glu Thr Lys Asn Ser Arg Asp Leu Asn Gln Glu Ser Val Ile
        35              40              45
Leu Lys Glu Asn Arg Glu Thr Pro Ser Leu Val Lys Arg Leu Ser Arg
        50              55              60
Arg Ser Arg Arg Leu Phe Ala Arg Arg Asp Gln Thr Gln Lys Asp Thr
65              70              75              80
Leu Gln Val Gln Ala Asn Phe Lys Thr Tyr Ala Glu Lys Ile Ser Glu
                85              90              95
Gln Asp Glu Arg Asp Leu Ser Phe Val Val Ser Ser Ala Ala Glu Lys
            100             105             110
Ser Ser Ile Ser Leu Ala Leu Ser Gln Gly Glu Ile Lys Asp Ala Leu
        115             120             125
Tyr Arg Ile Arg Glu Val His Pro Leu Ala Leu Ile Glu Ala Leu Ala
        130             135             140
Glu Asn Pro Ala Leu Ile Glu Gly Met Lys Lys Met Gln Gly Arg Asp
145             150             155             160
Trp Ile Trp Asn Leu Phe Leu Thr Gln Leu Ser Glu Val Phe Ser Gln
                165             170             175
Ala Trp Ser Gln Gly Val Ile Ser Glu Glu Asp Ile Ala Ala Phe Ala
            180             185             190
Ser Thr Leu Gly Leu Asp Ser Gly Thr Val Ala Ser Ile Val Gln Gly
        195             200             205
Glu Arg Trp Pro Glu Leu Val Asp Ile Val Ile Thr
210             215             220
```

```
        <210> 878
        <211> 465
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 878
Ser Ile Ala Thr Gly Glu Thr Met Leu Tyr Phe Ile Glu Gln Leu Asn
1               5               10              15
Lys Leu Ser Thr Ser Phe Cys Val Phe Pro Met Ile Leu Leu Leu Gly
                20              25              30
Gly Phe Leu Thr Trp Lys Leu Arg Gly Leu Gln Phe His Gly Leu Lys
        35              40              45
Leu Gly Phe Asn Leu Met Leu Gln Asn Lys Leu Asp Asp Ser Ser Ser
        50              55              60
Lys Ala Asn Glu Val Ser Ser Tyr Glu Ala Val Ala Gly Ile Leu Ala
65              70              75              80
Gly Asn Phe Gly Thr Gly Asn Ile Ala Gly Met Ala Val Ala Leu Ala
                85              90              95
```

```
Cys Gly Gly Pro Gly Ala Leu Val Trp Val Trp Leu Ala Ala Leu Leu
          100             105             110
Gly Ala Ile Val Gln Tyr Ala Gly Ser Tyr Leu Gly Ser Lys Tyr Arg
          115             120             125
Lys Pro Glu Gly Asn Thr Gly Glu Phe Ile Gly Gly Pro Ile Ala Cys
          130             135             140
Leu Ala Phe Gly Met Arg Lys Lys Ile Leu Ala Gly Phe Phe Ala Leu
145                 150             155             160
Phe Thr Ile Met Thr Ala Phe Cys Ala Gly Asn Cys Val Gln Val Ser
                165             170             175
Cys Ile Val Pro Leu Cys Ala Glu Gly Thr Pro Gly Lys Leu Leu Val
                180             185             190
Gly Ile Leu Leu Ala Leu Val Val Ile Pro Val Leu Ala Gly Gly Asn
          195             200             205
Asn Arg Ile Leu Arg Phe Ser Ala Arg Val Ile Pro Phe Ile Ala Gly
210             215             220
Phe Tyr Cys Ile Ser Cys Gly Ile Ile Leu Phe Gln His Ala Ser Ala
225             230             235             240
Ile Leu Pro Ala Ile Lys Leu Ile Cys Ser Ser Ala Phe Gly Ile Lys
                245             250             255
Ala Gly Leu Ala Gly Ile Gly Gly Tyr Thr Leu Ser Gln Val Ile Ser
                260             265             270
Thr Gly Ile Asn Arg Ala Val Met Ala Thr Asp Cys Gly Ser Gly Met
                275             280             285
Val Ser Ile Leu Gln Ala Asn Thr Lys Ser Lys Asn Pro Val Val Asp
          290             295             300
Gly Leu Val Thr Leu Val Pro Pro Val Ile Val Met Val Val Cys Ser
305             310             315             320
Ile Thr Met Leu Val Leu Ile Val Ser Gly Ala Tyr Ser Ser Gly Ala
                325             330             335
Gln Gly Thr Leu Met Val Met Ser Ala Phe Lys Asn Ser Leu Gly Ser
                340             345             350
Leu Gly Ser Val Ile Val Ile Leu Ala Met Ala Leu Phe Gly Tyr Thr
          355             360             365
Thr Ile Leu Thr Trp Phe Ala Cys Ala Glu Lys Ser Leu Gln Tyr Met
370                 375             380
Ile Pro Gly Arg Arg Ala Asn Leu Trp Leu Lys Ala Ile Tyr Val Leu
385             390             395             400
Ile Ile Pro Leu Gly Gly Val Ile Asp Met Arg Met Ile Trp Ala Leu
                405             410             415
Ser Asp Thr Gly Phe Ser Gly Met Val Ile Leu Asn Cys Ile Ala Leu
                420             425             430
Ile Ala Leu Leu Lys Asp Val Leu Ser Thr Asn Arg Asp Val Ala Leu
          435             440             445
Leu Lys Glu Arg Glu Cys Ser Val Ala Asp Pro Val Arg Asn Leu Asp
          450             455             460
Ala
465

          <210> 879
          <211> 154
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 879
Arg Arg Arg Ile Met Gln Leu Leu Ser Pro Ala Phe Ala Tyr Gly Ala
1                 5               10              15
Pro Ile Pro Lys Lys Tyr Thr Cys Gln Gly Ala Gly Ile Ser Pro Pro
          20              25              30
Leu Thr Phe Val Asp Val Pro Gly Ala Ala Gln Ser Leu Ala Leu Ile
          35              40              45
```

```
Val Glu Asp Pro Asp Val Pro Lys Glu Ile Arg Ser Asp Gly Leu Trp
    50              55                 60
Ile His Trp Ile Val Tyr Asn Leu Ser Thr Thr Ile Thr Asn Leu Ala
65              70                 75                         80
Glu Gly Ala Glu Ile Phe Ala Val Gln Gly Leu Asn Thr Ser Gly Lys
                85                 90                 95
Pro Val Tyr Glu Gly Pro Cys Pro Pro Asp Lys Gln His Arg Tyr Phe
                100             105                110
Phe Thr Leu Phe Ala Leu Asp Val Val Leu Pro Glu Glu Glu Asn Val
        115                 120             125
Thr Arg Asp Gln Leu Tyr Glu Ala Met Glu Phe His Ile Ile Glu Gln
    130                 135                 140
Ala Glu Leu Met Gly Thr Tyr Glu Lys Ser
145                 150
```

        <210> 880
        <211> 223
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 880
```
Gly Cys Met Ser Thr Val Thr Thr Glu Pro Cys Ser Ser Ile His Ile
1               5                  10                 15
Ser Leu Asn Asn Asp Trp Arg Asp Ser Gln Pro Tyr Ser Leu Asp Arg
        20                 25                 30
Ala Ser Glu Leu Leu His Phe Arg Phe Leu Pro Ser Leu Val Phe Ser
        35                 40                 45
Asn Trp Lys Val Glu Gln Gln Ile Glu Thr Leu Cys His Lys Ser Glu
        50                 55                 60
Lys Arg Arg Leu Ile Ser Pro Leu Ala Lys Trp Leu Gly Lys Leu His
65                 70                 75                         80
Lys Gln Asp Leu Leu Cys Pro Pro Ala Pro Pro Val Ser Val Cys Trp
                85                 90                 95
Ile Asn Ala His Val Gly Tyr Gly Val Phe Ala Arg Asp Glu Ile Ala
                100             105                110
Pro Trp Thr Tyr Ile Gly Glu Tyr Thr Gly Ile Leu Arg His Arg Gln
        115                 120                 125
Ala Ile Trp Met Asp Glu Asn Asp Tyr Cys Phe Arg Tyr Pro Met Pro
        130                 135                 140
Leu Phe Thr Leu Arg Tyr Phe Thr Ile Asp Ser Gly Lys Gln Gly Asn
145                 150                 155                    160
Val Thr Arg Phe Ile Asn His Ser Glu Gln Pro Asn Ala Glu Ala Ile
                165                 170                 175
Gly Val Phe Ser Glu Gly Leu Phe His Val Ile Ile Arg Thr Val Ala
                180                 185                 190
Pro Ile Tyr Ala Gly Gln Glu Ile Cys Tyr His Tyr Gly Pro Leu Tyr
        195                 200                 205
Trp Lys His Arg Lys Lys Arg Glu Glu Phe Ile Pro Glu Glu Glu
    210                 215                 220
```

        <210> 881
        <211> 273
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 881
```
Tyr Arg Ile Leu Trp Lys Val Ser Met Gln Gly Phe Phe Pro Leu Ala
1               5                  10                 15
Ser Gly Ser Lys Gly Asn Ser Ala Tyr Leu Gly Thr Asp Ser Cys Lys
        20                 25                 30
```

Ile Leu Ile Asp Leu Gly Val Ser Lys Gln Val Val Thr Arg Glu Leu
        35   40   45
Leu Ser Met Asn Ile Asp Pro Glu Asp Ile Gln Ala Ile Phe Val Thr
    50   55   60
His Glu His Ser Asp His Ile Ser Gly Ile Lys Ser Phe Val Lys Ala
65   70   75   80
Tyr Asn Thr Pro Ile Val Cys Asn Leu Glu Thr Ala Arg Ala Leu Cys
                85   90   95
His Leu Leu Asp Ser His Pro Glu Phe Lys Ile Phe Ser Thr Gly Ser
        100   105   110
Ser Phe Cys Phe Gln Asp Leu Glu Val Gln Thr Phe Asn Val Pro His
        115   120   125
Asp Ala Val Asp Pro Val Ala Phe Ile Phe His Tyr Arg Glu Glu Lys
    130   135   140
Leu Gly Phe Cys Thr Asp Leu Gly Trp Val Thr Ser Trp Ile Thr His
145   150   155   160
Glu Leu Tyr Asp Cys Asp Tyr Leu Leu Ile Glu Ser Asn His Ser Pro
                165   170   175
Glu Leu Val Arg Gln Ser Gln Arg Pro Asp Val Tyr Lys Lys Arg Val
        180   185   190
Leu Ser Lys Leu Gly His Ile Ser Asn Gln Glu Cys Gly Gln Leu Leu
        195   200   205
Gln Lys Ile Ile Thr Pro Lys Leu Lys Lys Leu Tyr Leu Ala His Leu
    210   215   220
Ser Thr Glu Cys Asn Thr Ala Glu Leu Ala Leu Ser Thr Val Ser Glu
225   230   235   240
Ser Ile Ala Ser Ile Thr Ser Ile Ala Pro Glu Ile Ala Leu Ala Gln
                245   250   255
Gly Ile Thr Ser Pro Ile Tyr Phe Ser Arg Leu Glu Val Ala Cys Pro
                260   265   270
Arg

        <210> 882
        <211> 807
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 882
Pro Met Ile Arg Glu Arg Lys Lys Ser Arg His Pro Arg Leu Pro Thr
1   5   10   15
Leu Pro Leu Ala Ala Lys Ala Ser Leu Tyr Leu Phe Phe Ala Cys Phe
            20   25   30
Ser Gly Leu Ser Leu Trp Ser Phe His Arg Asp Gln Pro Cys Thr Gln
        35   40   45
Asn Trp Ile Gly Leu Leu Gly Trp Ser Phe Ser Ser Phe Leu Leu Tyr
    50   55   60
Phe Phe Gly Ala Ala Ala Phe Phe Ile Pro Leu Tyr Phe Leu Trp Leu
65   70   75   80
Ser Phe Leu Tyr Phe Arg Arg Thr Pro Arg Pro Leu Phe Phe Tyr Lys
                85   90   95
Ala Ala Ala Phe Leu Ser Leu Pro Phe Cys Ser Ala Ile Leu Leu Ser
        100   105   110
Met Leu Ser Pro Val Gly Thr Leu Pro Ala Leu Leu Asp Thr Arg Leu
    115   120   125
Pro Lys Phe Ile Leu Gly Asn Asn Pro Pro Val Ser Tyr Val Gly Gly
    130   135   140
Ile Pro Phe Tyr Leu Phe Tyr Glu Gly Gln Ser Phe Cys Leu Lys His
145   150   155   160
Leu Ile Gly Ser Val Gly Thr Ala Leu Ile Phe Gly Phe Val Met Leu
                165   170   175

1091

```
Phe Ser Val Leu Tyr Leu Cys Gly Gly Ile Ala Leu Leu Lys Lys Lys
            180             185                     190
Thr Phe Gln Asp Gly Val Lys Lys Ala Phe Cys Ser Phe Phe Gln Thr
        195             200                 205
Cys Phe Lys Asn Leu Lys Lys Leu Ile Asn Arg Arg Asn Tyr Leu Pro
    210             215                 220
Lys Pro Ser Val Pro Phe Val Ser Lys Asn Pro Phe Ser Cys Thr Lys
225             230                 235                 240
Ser Gln Pro Ser Pro Arg Arg Val Ser Glu Thr Ile Ile Leu Asp Gly
            245                 250                 255
Ser Ile Ser Pro Leu Pro Gln Glu Glu Ile Pro Gly Ser Lys Lys Glu
            260                 265                 270
Ser Phe Phe Leu Thr Pro His Pro Cys Lys Arg Phe Leu Thr Lys Phe
        275             280                 285
Val Glu Pro Gln Glu Asn Lys Ala Lys Glu Gly Lys Thr Ile Ala Leu
    290             295                 300
Ser Ser Thr Pro Thr Val Val Arg Glu Ser Lys Gly Lys Glu Arg Ala
305             310                 315                 320
Ala Leu Pro Lys Leu Lys Ser Leu Ala Val Pro Glu Asn Asp Leu Pro
            325             330                 335
Gln Tyr His Leu Leu Ser Lys Asn Arg Glu Ala Arg Pro Glu Ser Leu
        340             345                 350
Gln Ala Glu Leu Glu Arg Lys Ala Leu Ile Leu Lys Gln Thr Leu Thr
        355             360                 365
Ser Phe Gly Ile Asp Ala Asp Leu Gly Asn Ile Cys Ser Gly Pro Thr
    370             375                 380
Leu Ala Ala Phe Glu Val Leu Pro His Ser Gly Val Lys Val Gln Lys
385             390                 395                 400
Ile Lys Ser Leu Glu Asn Asp Ile Ala Leu Lys Leu Gln Ala Ser Ser
            405                 410                 415
Ile Arg Ile Ile Ala Pro Ile Pro Gly Lys Ala Ala Val Gly Ile Glu
        420                 425                 430
Ile Pro Thr Pro Phe Pro Gln Ala Val Asn Phe Arg Asp Leu Leu Glu
        435             440                 445
Asp Tyr Gln Lys Thr Asn Arg Lys Leu Gln Ile Pro Leu Leu Leu Gly
    450             455                 460
Lys Lys Ala Asn Gly Asp Asn Leu Trp Ala Asp Leu Ala Thr Met Pro
465             470                 475                 480
His Leu Ile Ile Ala Gly Thr Thr Gly Ser Gly Lys Ser Val Cys Ile
            485                 490                 495
Asn Thr Ile Val Met Ser Met Ile Met Thr Thr Leu Pro Ser Glu Ile
            500             505                 510
Lys Leu Val Ile Ile Asp Pro Lys Lys Val Glu Leu Thr Gly Tyr Ser
            515             520                 525
Gln Leu Pro His Met Leu Ser Pro Val Ile Thr Glu Ser Arg Glu Val
    530             535             540
Tyr Asn Ala Leu Val Trp Leu Val Lys Glu Met Glu Ser Arg Tyr Glu
545             550                 555                 560
Ile Leu Arg Tyr Leu Gly Leu Arg Asn Ile Gln Ala Phe Asn Ser Arg
            565             570                 575
Thr Arg Asn Lys Thr Ile Glu Ala Ser Tyr Asp Arg Glu Ile Arg Glu
        580             585             590
Thr Met Pro Phe Met Val Gly Ile Ile Asp Glu Leu Ser Asp Leu Leu
        595             600             605
Leu Ser Ser Ser Gln Asp Ile Glu Thr Pro Ile Ile Arg Leu Ala Gln
    610             615             620
Met Ala Arg Ala Val Gly Ile His Leu Ile Leu Ala Thr Gln Arg Pro
625             630                 635                 640
Ser Arg Glu Val Ile Thr Gly Leu Ile Lys Ala Asn Phe Pro Ser Arg
            645                 650                 655
```

1092

```
Ile Ser Phe Lys Val Ser Asn Lys Val Asn Ser Gln Ile Ile Ile Asp
            660             665             670
Glu Pro Gly Ala Glu Asn Leu Met Gly Asn Gly Asp Met Leu Val Leu
        675             680             685
Leu Pro Ser Val Phe Gly Thr Ile Arg Ala Gln Gly Ala Tyr Ile Cys
        690             695             700
Asp Glu Asp Ile Asn Lys Val Ile Gln Asp Leu Cys Ser Arg Phe Pro
705             710             715             720
Thr Gln Tyr Val Ile Pro Ser Phe His Ala Phe Asp Asp Ser Asp Ser
            725             730             735
Asp Asn Ser Gly Glu Lys Asp Pro Leu Phe Ala Gln Ala Lys Thr Leu
            740             745             750
Ile Leu Gln Thr Gly Asn Ala Ser Thr Thr Phe Leu Gln Arg Lys Leu
        755             760             765
Lys Ile Gly Tyr Ala Arg Ala Ala Ser Leu Ile Asp Gln Leu Glu Glu
    770             775             780
Ala Arg Ile Ile Gly Pro Ser Glu Gly Ala Lys Pro Arg Gln Ile Leu
785             790             795             800
Ile Gln Asn Pro Leu Glu Gly
            805
```

<210> 883
<211> 188
<212> PRT
<213> Chlamydia pneumoniae

<400> 883
```
Asn Lys Lys Phe Ala Val His Met Pro Val Pro Ile Asp Asn Ser Ser
1               5               10              15
Arg Asn Leu Gln Glu Val Pro Glu Ser Leu Glu Asp Leu Glu Gln His
            20              25              30
Ala Glu Glu Ser Pro Thr His Gln Ser Ala Glu Ser Ser Ser Leu Gln
        35              40              45
Leu Ser Leu Ala Ser Ser Ala Ile Ser Ser Arg Val Glu Gln Leu Ser
    50              55              60
Ser Leu Val Leu Gly Met Glu Asn Ser Asp Phe Ser Ser Leu Arg Asp
65              70              75              80
Val Pro Ile Phe Ser Ala Ile Tyr Glu Ser Ser Thr His Thr Pro Val
            85              90              95
Pro Thr Pro Leu Val Gly Val Gly Tyr Ile Asn Gly Ser Gln Ser Gly
        100             105             110
Tyr Tyr Asp Thr Gln Arg Glu Ser Leu His Leu Ser Gln Leu Leu Gly
        115             120             125
Ser Arg Arg Val Glu Val Val Tyr Asn Gln Gly Asn Phe Met Glu Ala
130             135             140
Ser Leu Leu Asn Leu Cys Pro Arg Arg Pro Arg Arg Asp Pro Ser Pro
145             150             155             160
Ile Ser Leu Ala Leu Leu Glu Leu Trp Glu Ala Phe Phe Leu Glu His
            165             170             175
Pro Pro Gly Ser Thr Phe Asn Pro Ile Phe Phe Trp
        180             185
```

<210> 884
<211> 412
<212> PRT
<213> Chlamydia pneumoniae

<400> 884
```
Asn Thr Pro Gln Val Ala Leu Leu Ile Gln Tyr Phe Phe Gly Asn Gly
1               5               10              15
```

```
Ala Phe Tyr Val Arg Glu Ala Leu Arg Leu Thr Pro His Ala Gln Asn
        20              25              30
Ile Val Leu Val Gly Ile Cys Pro Ser Leu Tyr Pro Glu His Pro Arg
        35              40              45
Ser Phe Tyr Tyr Arg Val Ser Gly Asp Ile Gly Ser Arg Phe Asp Asp
    50              55              60
Arg Gly Phe Val Asn Ser Gly Val Glu Thr Leu Pro Tyr Ser Ser Gly
65              70              75              80
Ser Phe Gly Ile Phe Trp Ile Ser Phe Thr Asp Pro Thr Phe Asn Phe
                85              90              95
Ala Ile Val Asn Thr Phe Met Arg Thr Ala Gly Ile Asn Glu Val Ser
            100             105             110
Arg Pro Met Thr Gln Asp Thr Glu Thr Ser Leu Ile Glu Met Arg Asp
        115             120             125
Leu Ser Glu Gln Gln Glu Ala Asn Asn Thr Asp Ser Leu Glu Gln Glu
    130             135             140
Glu Ser Leu Met Gly Ile Val Gly His Thr Val Gly Gly Val Ser Met
145             150             155             160
Thr Val Thr Ser Ser Pro Asn Ile Phe Tyr Arg Ile Gln Thr Leu Leu
                165             170             175
Gly Leu Pro Glu Thr Leu Ala Glu Ala Glu Glu Asn Pro Thr Phe Pro
            180             185             190
Asn Ser Thr Ile Asp Ser Leu Ala Glu Ile Met Met Asn Leu Val Arg
        195             200             205
Ile Ser Asp Ala Val Ser Ile Phe Trp Ile Phe Pro Ile Val Asp Thr
    210             215             220
Thr Tyr Asn Gly Val Leu Leu Ala Val Cys Ile Gly Phe Phe Gly Ile
225             230             235             240
Asn Gly Ile Cys Ser Thr Phe Leu Met Leu Thr Asn Pro Arg Ser Arg
            245             250             255
Arg Asp Arg Trp Arg Asn Leu Arg Ile Met Val Leu Cys Tyr Arg Ser
        260             265             270
Leu Gly Ser Gly Met Asn Leu Phe Asp Leu Ser Asn Asn Val Arg Met
    275             280             285
Ala Ala Arg Arg His Val Thr Ser Cys Thr Val Ala Leu Tyr Ala Met
    290             295             300
Val Thr Leu Phe Gly Trp Thr Val Ala Ile Gln Asp Ala Leu Gln Tyr
305             310             315             320
Gly Phe Pro Ser Val Arg Asp Ala Phe Tyr Arg Tyr Cys Leu Arg His
            325             330             335
Arg Tyr Cys Leu Thr Gln Arg Asn Glu Asp Ser Leu Gln Thr Thr Gly
        340             345             350
Thr Arg Phe Gln Val Thr Arg Thr His Leu Glu Asp Gln Gln Met Val
        355             360             365
Ala Ser Ile Leu Asn Leu Ser Val Phe Gly Leu Phe Phe Gly Phe Val
    370             375             380
Gly Leu Met Thr Thr Phe Gly Gly Leu Glu Ile Ser Pro Ser Cys Arg
385             390             395             400
Trp Asp Ala Ala Asn Asn Arg Thr Val Gly Ile Phe
            405             410
```

```
Leu Tyr Glu Leu Phe Ile Lys Ser Gly Ile Phe Ile Val Met Thr Trp
1               5               10              15
Leu Ser Gly Leu Tyr Phe Ile Cys Ile Ala Ser Leu Ile Phe Cys Ala
        20              25              30
```

Ile Gly Val Ile Leu Ala Gly Val Ile Leu Leu Ser Arg Lys Leu Phe
35   40   45
Ile Lys Val His Pro Cys Lys Leu Lys Ile Asn Asp Asn Glu Glu Leu
50   55   60
Thr Lys Thr Val Glu Ser Gly Gln Thr Leu Leu Val Ser Leu Leu Ser
65   70   75   80
Ser Gly Ile Pro Ile Pro Ser Pro Cys Gly Gly Lys Ala Thr Cys Lys
85   90   95
Gln Cys Lys Val Arg Val Val Lys Asn Ala Asp Glu Pro Leu Glu Thr
100   105   110
Asp Arg Ser Thr Phe Ser Lys Arg Gln Leu Glu Glu Gly Trp Arg Leu
115   120   125
Ser Cys Gln Cys Lys Val Gln His Asp Met Ser Leu Glu Ile Glu Glu
130   135   140
Arg Tyr Leu Asn Ala Ser Ser Trp Glu Gly Thr Val Ile Ser Asn Asp
145   150   155   160
Asn Val Ala Thr Phe Ile Lys Glu Leu Val Val Ala Val Asp Pro Asn
165   170   175
Lys Pro Ile Pro Phe Lys Pro Gly Gly Tyr Leu Gln Ile Thr Val Pro
180   185   190
Ser Tyr Lys Thr Asn Ser Ser Asp Trp Lys Gln Thr Met Ala Pro Glu
195   200   205
Tyr Tyr Ser Asp Trp Glu His Phe His Leu Phe Asp Gln Val Ile Asp
210   215   220
Asn Ser Gln Leu Pro Ala Asp Ser Ala Asn Lys Ala Tyr Ser Leu Ala
225   230   235   240
Ser Tyr Pro Ala Glu Leu Pro Thr Ile Lys Phe Asn Ile Arg Ile Ala
245   250   255
Thr Pro Pro Phe Ile Asn Gly Lys Pro Asn Ser Glu Ile Pro Trp Gly
260   265   270
Val Cys Ser Ser Tyr Val Phe Ser Leu Lys Pro Gly Asp Lys Ile Thr
275   280   285
Val Ser Gly Pro Tyr Gly Glu Ser Phe Met Lys Asp Asp Asp Arg Pro
290   295   300
Leu Ile Phe Leu Ile Gly Gly Ala Gly Ser Ser Phe Gly Arg Ser His
305   310   315   320
Ile Leu Asp Leu Leu Leu Asn Lys His Ser Lys Arg Glu Ile Asp Leu
325   330   335
Trp Tyr Gly Ala Arg Ser Leu Lys Glu Asn Ile Tyr Gln Glu Glu Tyr
340   345   350
Glu Asn Leu Glu Arg Gln Phe Pro Asn Phe His Tyr His Leu Val Leu
355   360   365
Ser Glu Pro Leu Pro Glu Asp Ile Ala Ala Gly Trp Asp Lys Asp Asp
370   375   380
Pro Thr Lys Thr Asn Phe Leu Phe Arg Ala Phe Asn Leu Gly Gln Leu
385   390   395   400
Ser Arg Leu Asp Asn Pro Glu Asp Tyr Leu Tyr Tyr Val Cys Gly Pro
405   410   415
Pro Leu His Asn Ser Ser Ile Leu Lys Leu Leu Gly Asp Tyr Gly Val
420   425   430
Glu Arg Ser Ser Ile Ile Leu Asp Asp Phe Gly Ser
435   440

<210> 886
<211> 120
<212> PRT
<213> Chlamydia pneumoniae

<400> 886
Gly Asp Cys Met Leu Ser Arg Ile Val Thr Cys Phe Leu Phe Leu Leu
1   5   10   15

1095

Ser Ser Leu Pro Leu Phe Ala Glu Glu Glu Ala Ala Gln Ser Lys Asn
            20   25   30
Thr Phe Val Gln Pro Ala Val Met Leu Ala Ile Ala Ile Leu Phe Phe
            35   40   45
Tyr Phe Ile Leu Trp Arg Pro Glu Gln Lys Arg Arg Lys Ala Met Glu
            50   55   60
Lys Arg Lys Asn Asp Leu Ala Lys Gly Asp Lys Val Thr Ala Met Gly
65   70   75   80
Ile Ile Gly Thr Val Asp Asp Ile Arg Glu His Thr Val Ile Leu Asn
                    85   90   95
Ile Ala Ser Gly Lys Val Glu Val Leu Lys Gly Ala Ile Ser Glu Ile
                100   105   110
Leu Lys Pro Asn Asp Asn Lys Ser
            115   120

<210> 887
<211> 406
<212> PRT
<213> Chlamydia pneumoniae

<400> 887
Ala Ser Ile Leu Thr Met Ser Thr Met Gln Asn Cys Pro His Phe Gly
1   5   10   15
Val Cys Gly Gly Cys Ser Phe Pro Gln Ser Asn Tyr Ser Asp Ser Leu
            20   25   30
Lys Lys Lys Glu Glu Leu Leu His Gln Leu Phe Ala Pro Leu Val Pro
            35   40   45
Ser Asp Met Ile Ala Pro Ile Ile Pro Cys Ser Pro Ser Leu Arg Gly
            50   55   60
Arg Asn Lys Met Glu Phe Ser Phe Phe Gln Thr Tyr Glu Gly Glu Lys
65   70   75   80
Ser Leu Gly Phe Ile Ser Ser Thr Lys Pro Lys Lys Gly Ile Pro Val
                85   90   95
Thr Thr Cys Leu Leu Ile His Glu Gln Thr Met Asp Ile Leu Lys Leu
                100   105   110
Thr Arg Glu Trp Trp Asp Lys His Pro Glu Leu Met Ala Tyr Phe Pro
            115   120   125
Pro Lys Asn Lys Gly Ser Leu Cys Thr Leu Thr Val Arg Thr Gly Ser
            130   135   140
Pro Gln Gln Asn Phe Met Val Ile Leu Thr Thr Ser Gly Thr Pro Glu
145   150   155   160
Tyr Arg Val Asn Glu Ala Cys Ile Asp Glu Trp Lys Glu Ile Leu Leu
                165   170   175
Ser Ser Ser Leu Asn Ile Ala Ser Ile Tyr Trp Glu Glu Lys Val Ala
                180   185   190
Ala Arg Gly Ile Ser Thr Tyr Tyr Glu Thr Lys Leu Leu Tyr Gly Ala
        195   200   205
Pro Ser Ile Gln Gln Lys Leu Ser Leu Pro Ser Asp Gly Asn Ser Ala
        210   215   220
Ser Phe Ser Leu Arg Pro Arg Ser Phe Phe Gln Pro Gln Ile Thr Gln
225   230   235   240
Ala Ala Lys Ile Ile Glu Thr Ala Lys Glu Phe Ile Asn Pro Glu Gly
                245   250   255
Ser Glu Thr Leu Leu Asp Leu Tyr Cys Gly Ala Gly Thr Ile Gly Ile
                260   265   270
Met Leu Ser Pro Tyr Val Lys Asn Val Ile Gly Val Glu Ile Ile Pro
            275   280   285
Asp Ala Val Ala Ser Ala Gln Glu Asn Ile Lys Ala Asn Asn Lys Glu
290   295   300
Asp Cys Val Glu Val Tyr Leu Glu Asp Ala Lys Ala Phe Cys Lys Arg
305   310   315   320

1096

Asn Glu Asn Cys Lys Ala Pro Asp Val Ile Ile Ile Asp Pro Pro Arg
              325   330   335
Cys Gly Met Gln Ser Lys Val Leu Lys Tyr Ile Leu Arg Ile Gly Ser
              340   345   350
Pro Lys Ile Val Tyr Ile Ser Cys Asn Pro Lys Thr Gln Phe Gln Glu
              355   360   365
Cys Ala Asp Leu Ile Ser Gly Gly Tyr Arg Ile Lys Lys Met Gln Pro
              370   375   380
Ile Asp Gln Phe Pro Tyr Ser Thr His Leu Glu Asn Ile Ile Leu Leu
385   390   395   400
Glu Arg Glu Ile Asp Pro
              405

        <210> 888
        <211> 127
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 888
Arg Thr Leu Phe Met Ala Leu Lys Asp Thr Ala Lys Lys Met Lys Asp
1   5   10   15
Leu Leu Asp Ser Ile Gln His Asp Leu Ala Lys Ala Glu Lys Gly Asn
              20   25   30
Lys Ala Ala Ala Gln Arg Val Arg Thr Asp Ser Ile Lys Leu Glu Lys
              35   40   45
Val Ala Lys Leu Tyr Arg Lys Glu Ser Ile Lys Ala Glu Lys Ser Gly
              50   55   60
Leu Leu Lys Arg Lys Pro Ser Thr Lys Ala Pro Ala Lys Val Lys Lys
65   70   75   80
Thr Ala Glu Lys Lys Ala Pro Lys Lys Ser Ser Ala Ala Ala Ala Lys
              85   90   95
Thr Ser Lys Ala Val Lys Ala Ser Lys Pro Ala Ser Lys Lys Thr Ala
              100   105   110
Ala Lys Lys Val Lys Lys Pro Ser Lys Ala Arg Gly Phe Arg Lys
              115   120   125

        <210> 889
        <211> 822
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 889
Met Lys Lys Leu Tyr His Pro Thr Leu Phe Leu Arg Pro Leu Ile Arg
1   5   10   15
Leu Ser Leu Ile Phe Ala Leu Ser Leu Thr Leu Ile Ser Gly Asn Phe
              20   25   30
Pro Gln Gln Lys Ser Phe Gly His Cys Cys Ala Asp Met His Ser Ala
              35   40   45
Leu Ile Ser Gly Lys Asn Cys Glu Glu Leu Phe Ala Asp Phe Ile Glu
              50   55   60
Arg Val Leu Ala Asp Arg Glu Thr Leu Thr Ala Arg Asp Trp Gly Thr
65   70   75   80
Val Val Val Leu Val Arg Glu Tyr Leu Leu Lys Cys Ile Arg Lys Gly
              85   90   95
Asp Cys Asp Tyr Gly Val Lys Ile Leu Gln Lys Leu Leu Ala Leu Arg
              100   105   110
Leu Pro Lys Asp Ala Arg Lys Asp Leu Gln Ile Leu Trp His Arg Leu
              115   120   125
Asn Pro Glu Gln Ala Pro Leu Arg Asp Val Val Asp Gln Leu Phe Thr
130   135   140

1097

```
Ile Gly Cys His Glu Ser Leu Gln Asp His Leu Leu Phe Glu Leu Tyr
145               150               155               160
Thr Val Thr Leu His Ser Gly Tyr Glu Asn Arg Lys Gln Asp Met Leu
                165               170               175
Leu Ala Lys Glu Gln Gly Asp Tyr Lys Lys Ala Ile Glu Leu Ala Lys
                180               185               190
Glu Leu Val Ala Ala Leu Glu Lys Gly Ser Cys Ser Pro His Pro Glu
                195               200               205
Ile Val Gln Ile Glu Lys Thr Phe Leu Gln Lys Thr Leu Leu Ala Leu
    210               215               220
Gln Ile Lys Val Ala Gln Glu Ala Gln Glu Ser Cys Asp Ala Leu Leu
225               230               235               240
Thr Pro Tyr Cys Leu Ser Glu Ile Ala Tyr Thr Glu Ala Met Asp Ala
                245               250               255
Leu Val Leu Arg Ile Ala Arg Gly Glu Val Ser Arg Thr Asn Glu Val
                260               265               270
Asp Ser Val Leu Leu Ser His Ala Leu Gln His Leu Pro Phe Ala Arg
                275               280               285
Glu Lys Ala Ile Pro Glu Leu Glu Val Leu Ile Asp His Gly Ala Tyr
    290               295               300
Leu Glu Ser Thr Leu Leu Tyr Tyr Ala Tyr Phe Ser Leu Leu Glu Leu
305               310               315               320
Tyr His Gln Asn Lys Asp Phe Ala Ser Leu Glu Arg Leu Leu Glu Lys
                325               330               335
Gly Asp Ala Val Phe Val Pro Glu His Pro Tyr Phe Pro Glu Tyr Gly
                340               345               350
Phe Phe Leu Gly Ala Tyr Phe Tyr Ala Lys Gly Lys Tyr Glu Ser Ala
                355               360               365
Glu Lys Val Phe Leu Gln Ile Ile Asp Pro Ala Val Lys Leu Gly Ala
    370               375               380
Thr Phe Ala Arg Ala Tyr Glu Tyr Leu Gly Cys Ile Ala Tyr Val Gln
385               390               395               400
Asn His Tyr Glu Lys Ala Glu Glu Tyr Phe Leu Arg Ala Tyr Lys Ser
                405               410               415
Trp Gly Arg Glu Glu Ser Gly Ile Gly Leu Phe Leu Ala Tyr Ala Val
                420               425               430
Gln Lys Lys Lys Thr Ala Cys Glu Asp Met Leu Tyr His Pro Lys Phe
                435               440               445
Ser Phe Thr Tyr Arg His Leu Leu Asp Ser Leu Cys Ser Leu Ser Tyr
    450               455               460
Pro His Gly Glu Asn Lys Gly Ser Ser Ala Ile Gln Arg Val His Arg
465               470               475               480
Ala Val Pro Glu Leu Ser Glu Ile Tyr Ser Arg Cys Ile Tyr Asp Met
                485               490               495
Ile Lys Tyr Arg Asn Val Thr Tyr Thr His Pro Ile Ile Glu Leu Ala
                500               505               510
Tyr Asn Gln Val Arg Asn Leu Glu Lys Arg Asn Leu Glu Glu Ile Cys
                515               520               525
Arg Asp Ala Gln Asp Pro Glu Tyr Asp Lys Ala Leu Ala Phe Trp Gly
530               535               540
Ala Leu Gln Ser Gly Ala Ser Val Pro Arg Ser Leu Ile Glu Ser Ser
545               550               555               560
Asp Val Asp Glu Ala Arg Ile Thr Ile Arg Cys Tyr Glu Ala Leu Tyr
                565               570               575
Phe His Asn Pro Asp Ala Ile Ala Met Leu Pro Gln Ala Phe Ser Glu
                580               585               590
Glu Cys Asn Ser Trp Gln Thr Ala Leu Arg Leu Val Trp Thr Leu Val
                595               600               605
Arg Pro Lys Gly Ala Pro Asn His Ala Lys Tyr Trp Asp His Leu Val
610               615               620
```

1098

```
Leu Arg Pro His Gly Asp Ser Leu Tyr Phe Phe Gly Tyr Asp Leu Gln
625             630             635             640
Glu Tyr Leu Ile Gly Lys Glu Asp Ala Leu Lys His Leu Ser Val Phe
            645             650             655
Ala Glu Leu Phe Pro Lys Ser Ser Leu Leu Ser Leu Val Tyr Tyr Leu
            660             665             670
Gln Gly Tyr Ser Glu Ser Ser Ala Leu Arg Lys Val Gly Trp Phe Val
            675             680             685
Lys Ala Leu Glu Glu Phe Thr Glu Ile Ser Trp Ser Gly Glu His Met
    690             695             700
Lys Thr Trp Ala Tyr Ile Tyr Tyr Met Val Lys Leu Asp Leu Ala Asp
705             710             715             720
Thr Tyr Ile Ser Leu Gly Asn Phe Ser Gln Ala Val His Ile Leu Glu
            725             730             735
Glu Val Lys Glu Asp Trp Gln Val Ala Ser His Pro Lys Leu His Phe
            740             745             750
Leu Lys Gly Glu Asp Cys Tyr Leu Ala Met Glu Leu Arg Trp Val Glu
            755             760             765
Gly Leu Ala Tyr Ala Tyr Phe Gln Leu His Glu Thr Ala His Leu Ser
    770             775             780
Asn His Leu Leu Glu His Val Glu Lys Asn Leu Ile Ser Pro Arg Ser
785             790             795             800
Tyr Arg Asp Tyr Tyr Gly Glu Ser Leu Gln Arg Thr Leu Gly Leu Cys
            805             810             815
Gln Arg Phe Leu Gly Val
            820


        <210> 890
        <211> 441
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 890
Ala Glu Arg Arg Phe Cys Val Lys Arg Ala Ile Ile Ile Gly Ala Gly
 1             5               10              15
Ile Ser Gly Leu Ala Ala Gly Trp Trp Leu His Lys Lys Phe Pro Gln
            20              25              30
Ala Glu Ile Leu Val Leu Asp Lys Glu Ala Tyr Ala Gly Gly Phe Val
            35              40              45
Arg Thr Glu Ser Pro Gln Gly Phe Ser Phe Asp Leu Gly Pro Lys Gly
    50              55              60
Phe Leu Thr Arg Gly Asp Gly Glu Tyr Thr Leu Lys Leu Ile His Glu
65              70              75              80
Leu Gly Leu Gln Asn Ser Leu Ile Phe Ser Asp Arg Ala Ala Lys Asn
            85              90              95
Arg Phe Val Tyr Tyr Arg Gly Lys Ala His Lys Ile Ser Thr Trp Thr
            100             105             110
Leu Leu Arg Lys Gly Leu Leu Pro Ser Leu Ile Lys Asp Phe Arg Ala
            115             120             125
Pro Cys Tyr Thr Gln Asp Ser Ser Val Gln Asp Phe Leu Lys Arg His
    130             135             140
Ser Ser Gln Asn Phe Thr Ser Tyr Ile Leu Asp Pro Leu Ile Thr Ala
145             150             155             160
Ile Arg Ala Gly His Ser Ser Ile Leu Ser Thr His Met Ala Phe Pro
            165             170             175
Glu Leu Ala Lys Arg Glu Ala Ser Ser Gly Ser Leu Leu Arg Ser Tyr
            180             185             190
Leu Lys Asn Arg Ser Pro Lys Lys Ser Lys Thr Asp Arg Tyr Leu Ala
            195             200             205
Ser Leu Ser Pro Ser Met Gly Thr Leu Ile Thr Thr Ile Gln Glu Lys
210             215             220
```

```
Leu Pro Ala Thr Trp Lys Phe Ser Thr Ser Val Thr His Ile Asp Cys
225                 230                 235                 240
Ser Pro Lys Glu Ala Cys Val Thr Thr Pro Ser Glu Thr Phe Phe Ala
                245                 250                 255
Asp Met Val Ile Tyr Thr Gly Pro Leu Gln Gln Leu Pro Val Leu Leu
                260                 265                 270
Pro Asn Tyr Gly Ile Glu Asn Leu Ser Lys Arg Val Leu Pro Trp Asn
            275                 280                 285
Leu Ser Ser Ile Ser Leu Gly Trp His His Ala Asn Phe Ser Leu Pro
    290                 295                 300
Lys Gly Tyr Gly Met Leu Phe Ala Asp Glu Leu Pro Leu Leu Gly Ile
305                 310                 315                 320
Val Trp Asn Ser Gln Ile Phe Pro Gln Ala Thr Pro Gly Lys Thr Val
                325                 330                 335
Leu Ser Leu Leu Ile Glu Gly Lys Trp Arg Glu Ser Glu Ala His Ala
            340                 345                 350
Phe Ala Ile Ala Ala Leu Ser Glu Tyr Leu Asn Ile Asn Gln Lys Pro
            355                 360                 365
Asp Ala Phe Ala Leu Phe Ser Ser Gln Asp Gly Met Pro Gln His Ala
    370                 375                 380
Val Gly Phe Leu Glu Arg Lys Glu Arg Ile Leu Pro His Leu Pro Gly
385                 390                 395                 400
Asn Leu Lys Ile Val Gly Gln Asn Ile Ala Gly Pro Gly Leu Asn Arg
                405                 410                 415
Cys Ile Ala Ser Ala Tyr His Ala Ile Cys Asp Leu His Thr Glu Glu
            420                 425                 430
Thr Leu Ala Gln Pro Gln Ser Ser Leu
        435                 440


        <210> 891
        <211> 460
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 891
Phe Leu Met Phe Asn Val Asn Phe Lys Phe Leu Glu Gly Leu His Gln
1                   5                   10                  15
Pro Ala Pro Arg Tyr Thr Ser Tyr Pro Thr Ala Leu Glu Trp Glu Pro
                20                  25                  30
Ser Asp Ala Ala Pro Ala Leu Leu Ala Phe Gln Arg Ile Arg Glu Asn
        35                  40                  45
Pro Gln Pro Leu Ser Leu Tyr Phe His Ile Pro Phe Cys Gln Ser Met
    50                  55                  60
Cys Leu Tyr Cys Gly Cys Ser Val Val Leu Asn Arg Arg Glu Asp Ile
65                  70                  75                  80
Val Glu Ala Tyr Ile Asn Thr Leu Ile Gln Glu Met Lys Leu Val Val
                85                  90                  95
Glu Thr Ile Gly Phe Arg Pro Gln Val Ser Arg Ile His Phe Gly Gly
            100                 105                 110
Gly Thr Pro Ser Arg Leu Ser Arg Glu Leu Phe Thr Leu Leu Phe Asp
        115                 120                 125
His Ile His Lys Leu Phe Asp Leu Ser His Ala Glu Glu Ile Ala Ile
    130                 135                 140
Glu Val Asp Pro Arg Ser Leu Arg Asn Asp Met Glu Lys Ala Asp Phe
145                 150                 155                 160
Phe Gln Asn Val Gly Phe Asn Arg Val Ser Leu Gly Val Gln Asp Thr
                165                 170                 175
Gln Ala Asp Val Gln Glu Ala Val Arg Arg Arg Gln Ser His Glu Glu
            180                 185                 190
Ser Leu Lys Ala Tyr Glu Lys Phe Lys Glu Leu Ala Phe Gln Ser Ile
    195                 200                 205
```

Asn Ile Asp Leu Ile Tyr Gly Leu Pro Lys Gln Thr Lys Glu Ser Phe
210   215   220
Ser Lys Thr Ile Gln Asp Ile Leu Ala Met Tyr Pro Asp Arg Leu Ala
225   230   235   240
Leu Phe Ser Phe Ala Ser Val Pro Trp Ile Lys Pro His Gln Lys Ala
            245   250   255
Met Lys Ala Ser Asp Met Pro Ser Met Glu Glu Lys Phe Ala Ile Tyr
            260   265   270
Ser Gln Ser Arg His Leu Leu Thr Lys Ala Gly Tyr Gln Ala Ile Gly
            275   280   285
Met Asp His Phe Ser Leu Pro His Asp Pro Leu Thr Leu Ala Phe Lys
            290   295   300
Asn Lys Thr Leu Ile Arg Asn Phe Gln Gly Tyr Ser Leu Pro Pro Glu
305   310   315   320
Glu Asp Leu Leu Gly Leu Gly Met Thr Ser Thr Ser Phe Ile Arg Gly
                325   330   335
Ile Tyr Leu Gln Asn Ala Lys Thr Leu Glu Glu Tyr His Asn Thr Val
                340   345   350
Leu Arg Gly Thr Phe Ala Thr Val Lys Ser Lys Ile Leu Thr Glu Asp
            355   360   365
Asp Arg Ile Arg Lys Trp Ala Ile His Lys Leu Met Cys Thr Phe Thr
370   375   380
Ile Asn Lys Glu Glu Phe Phe Asn Leu Phe Gly Tyr Glu Phe Asp Thr
385   390   395   400
Tyr Phe Ile Glu Ser Arg Asp Arg Leu Ile Ser Met Glu Thr Thr Gly
                405   410   415
Leu Ile His Asn Ser Pro Gly Ser Leu Lys Val Thr Pro Leu Gly Glu
            420   425   430
Leu Phe Val Arg Val Ile Ala Thr Ala Phe Asp His Tyr Phe Leu Asn
            435   440   445
Lys Val Ser Lys Lys Glu Cys Phe Ser Ala Ser Ile
450   455   460

        <210> 892
        <211> 337
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 892
Ser Thr Leu His Asn Trp Asp Ser Met Ser Ala Phe Phe Asp Leu Leu
1   5   10   15
Lys Ser Gln Thr Ala Ser His Pro Pro Ile Trp Leu Leu Arg Gln Val
            20   25   30
Gly Arg Tyr Met Pro Pro Tyr Gln Glu Leu Lys Gly Ser Gln Ser Leu
            35   40   45
Lys Thr Phe Phe His Asn Thr Glu Ala Ile Val Glu Ala Thr Leu Leu
            50   55   60
Gly Pro Ser Leu Leu His Val Asp Ala Ala Ile Leu Phe Ala Asp Ile
65   70   75   80
Leu Ser Ile Leu Asp Gly Phe Ala Val Thr Tyr Asp Phe Ala Pro Gly
                85   90   95
Pro Arg Ile Gln Phe Ser Pro Glu Gln Pro Phe Thr Phe Thr Ser Asp
            100   105   110
Pro Gln Thr Ile Phe Ser Tyr Leu Leu Asp Ala Ile Arg Thr Leu Lys
            115   120   125
Gln Lys Leu Pro Val Pro Leu Ile Val Phe Ala Ala Ser Pro Phe Thr
            130   135   140
Leu Ala Cys Tyr Leu Ile Asp Gly Gly Ala Ser Lys Asp Phe Ser Lys
145   150   155   160
Thr Met Ser Phe Leu Tyr Val Tyr Pro Glu Lys Phe Asp Gln Leu Ile
                165   170   175

1101

```
Ser Thr Ile Ile Glu Gly Thr Ala Ile Tyr Leu Lys Thr Gln Met Asp
            180                 185                 190
Ala Gly Ala Ala Ala Val Gln Leu Phe Glu Ser Ser Ser Leu Arg Leu
            195                 200                 205
Pro Ser Ala Leu Phe Thr Arg Tyr Val Thr Glu Pro Asn Arg Arg Leu
        210                 215                 220
Ile Ala Lys Leu Lys Glu Gln Ala Ile Pro Val Ser Leu Phe Cys Arg
225                 230                 235                 240
Cys Phe Glu Glu Asn Phe Tyr Thr Leu Gln Ala Thr Gln Ala Asp Thr
                245                 250                 255
Leu His Pro Asp Tyr His Val Asp Leu His Arg Ile Gln Lys Asn Leu
            260                 265                 270
Met Leu Ser Leu Gln Gly Asn Leu Asp Pro Ala Ile Phe Leu Leu Pro
            275                 280                 285
Gln Glu Lys Leu Leu His Tyr Val Glu Ala Phe Leu Val Pro Leu Arg
        290                 295                 300
Thr Tyr Pro Asn Phe Ile Phe Asn Ser Gly His Gly Ile Leu Pro Glu
305                 310                 315                 320
Thr Pro Leu Glu Asn Val Gln Leu Val Val Ser Tyr Val Gln Arg Gln
                325                 330                 335
Leu


        <210> 893
        <211> 1087
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 893
Asn Phe Met Ala Met Asp Phe Asn Pro Val Asn Leu Asp Phe Ser Ile
1               5                   10                  15
Ser Lys Glu Phe Lys Glu Glu Thr Leu Pro Leu Leu Leu Glu Asn Ile
            20                  25                  30
His Pro Gly Ala Thr Ala Phe Leu Ala Ala Lys Met Phe His Asp Cys
            35                  40                  45
Arg Ala Ser Val Ile Met Ile Thr Thr Pro Ala Arg Leu Asp Asp Leu
        50                  55                  60
Phe Glu Asn Leu Arg Thr Phe Leu Asp Gln Ala Pro Val Glu Phe Pro
65                  70                  75                  80
Ser Ser Glu Ile Asp Leu Ser Pro Lys Leu Val Asn Ile Asp Ala Val
            85                  90                  95
Gly Lys Arg Asp His Leu Leu Tyr Ser Leu Asn Gln His Arg Ala Pro
        100                 105                 110
Ile Phe Cys Val Thr Thr Leu Lys Ala Leu Leu Glu Lys Thr Arg Ser
        115                 120                 125
Pro Gln Ala Thr Ser Gln Gln His Leu Asp Leu Ala Val Gly Asp Val
        130                 135                 140
Leu Asp Pro Glu Ala Thr Thr Glu Leu Cys Lys Ser Leu Gly Tyr Ser
145                 150                 155                 160
Gln Val Met Leu Thr Ser Glu Lys Gly Glu Phe Ser Cys Arg Gly Gly
                165                 170                 175
Ile Val Asp Ile Phe Pro Leu Ser Ser Pro Glu Pro Phe Arg Ile Glu
            180                 185                 190
Phe Trp Gly Glu Lys Ile Ile Ser Ile Arg Ser Tyr Asn Pro Ser Asp
        195                 200                 205
Gln Leu Ser Thr Gly Lys Val Ser Lys Ile Ser Ile Ser Pro Ala Tyr
        210                 215                 220
Thr Glu Glu Ala Ser Gly Gly Asn Tyr Ser His Ser Leu Leu Asp Tyr
225                 230                 235                 240
Phe Ser Thr Pro Pro Leu Tyr Leu Phe Asp Asn Leu Glu Ile Leu Glu
                245                 250                 255
```

1102

```
Asp Asp Phe Ala Asp Ile Ser Gly Thr Leu Ser Ser Leu Pro Asp Arg
        260             265             270
Phe Phe Ser Ile Gly Thr Leu Tyr Asp Arg Ile Ser Thr Ser Asn Gln
        275             280             285
Val Tyr Phe Ser Glu Thr Pro Phe Pro Asn Val Lys Asn Leu Lys Glu
        290             295             300
Asn Arg Val Ile Ile Glu Ala Phe His Arg Asn Met Glu Ala Ser Arg
305             310             315             320
Gln Ala Ile Pro Ile Leu Tyr Pro Glu Gln Ile Ile Gln Asn Asp Glu
            325             330             335
Asn Pro Leu Leu Ala Phe Leu Gln His Leu Gln Glu Tyr Met Pro Pro
            340             345             350
His Gly Lys Pro Leu Lys Leu Ala Ile Tyr Ser Thr Lys Thr Lys Ser
        355             360             365
Leu Lys Glu Ala Arg Ala Leu Ala Glu Thr Val Ala Arg Gly Asp Val
    370             375             380
Glu Ile Tyr Glu Lys Thr Gly Asn Leu Thr Ser Ser Phe Ala Leu Val
385             390             395             400
Asn Glu Ala Phe Ala Ala Ile Ser Leu Ser Glu Phe Ala Ser Thr Lys
            405             410             415
Val Leu Arg Arg Gln Lys Gln Arg Thr His Phe Ser Val Thr Thr Glu
            420             425             430
Glu Val Phe Val Pro Ile Pro Gly Glu Thr Val Val His Ile His Asn
            435             440             445
Gly Ile Gly Lys Phe Leu Gly Ile Glu Lys Lys Pro Asn His Leu Asn
    450             455             460
Ile Glu Thr Asp Tyr Leu Val Leu Glu Tyr Ala Asp Lys Ala Arg Leu
465             470             475             480
Tyr Val Pro Ser Asn Gln Ala Tyr Leu Ile Ser Arg Tyr Val Gly Thr
            485             490             495
Ser Asp Lys Ala Ala Asp Leu His His Leu Asn Ser Ser Lys Trp Lys
        500             505             510
Arg Ser Arg Asp Leu Thr Glu Lys Ser Leu Ile Val Tyr Ala Glu Lys
    515             520             525
Leu Leu Gln Leu Glu Ala Gln Arg Ser Thr Thr Pro Ala Phe Val Tyr
    530             535             540
Pro Pro His Gly Glu Ser Val Ile Lys Phe Ala Glu Thr Phe Pro Tyr
545             550             555             560
Glu Glu Thr Pro Asp Gln Leu Lys Thr Ile Asp Gln Ile Tyr Asn Asp
            565             570             575
Met Met Ser Pro Lys Leu Met Asp Arg Leu Ile Cys Gly Asp Ala Gly
            580             585             590
Phe Gly Lys Thr Glu Val Ile Met Arg Ala Ala Val Lys Ala Val Cys
        595             600             605
Asp Gly His Arg Gln Val Ile Val Met Val Pro Thr Thr Ile Leu Ala
    610             615             620
Thr Gln His Tyr Glu Thr Phe Lys Glu Arg Met Ala Gly Leu Pro Ile
625             630             635             640
Glu Ile Ala Val Leu Ser Arg Phe Ser Gln Ala Lys Val Gln Lys Leu
            645             650             655
Ile Cys Glu Gln Val Ala Ser Gly Gln Ile Asp Ile Ile Ile Gly Thr
            660             665             670
His Lys Leu Ile Asn Lys Ser Leu Glu Phe Lys Asn Pro Gly Leu Leu
        675             680             685
Ile Ile Asp Glu Glu Gln Arg Phe Gly Val Lys Val Lys Asp Asn Leu
    690             695             700
Lys Glu Arg Tyr Pro Met Ile Asp Cys Leu Thr Val Ser Ala Thr Pro
705             710             715             720
Ile Pro Arg Thr Leu His Met Ser Leu Ser Gly Ala Arg Asp Leu Ser
            725             730             735
```

1103

```
Val Ile Ala Met Pro Pro Leu Asp Arg Leu Pro Val Ser Thr Phe Val
            740             745             750
Met Glu His Asn Thr Glu Thr Leu Thr Ala Ala Leu Arg His Glu Leu
            755             760             765
Leu Arg Gly Gly Gln Ala Tyr Val Ile His Asn Arg Ile Glu Ser Ile
            770             775             780
Tyr Thr Leu Ala Glu Thr Ile Arg Asn Leu Ile Pro Glu Ala Arg Ile
    785             790             795             800
Gly Val Ala His Gly Gln Met Gly Ala Glu Asp Leu Ser Asn Ile Phe
            805             810             815
Thr Lys Phe Lys Asn Gln Lys Thr Asp Ile Leu Val Ala Thr Ala Leu
            820             825             830
Ile Glu Asn Gly Ile Asp Ile Pro Asn Ala Asn Thr Ile Leu Ile Asp
            835             840             845
His Ala Asp Lys Phe Gly Met Ala Asp Leu Tyr Gln Met Lys Gly Arg
    850             855             860
Val Gly Arg Trp Asn Lys Lys Ala Tyr Cys Tyr Phe Leu Val Pro His
865             870             875             880
Leu Asp Arg Leu Ser Gly Pro Ala Ala Lys Arg Leu Ala Ala Leu Asn
            885             890             895
Lys Gln Glu Tyr Gly Gly Gly Met Lys Ile Ala Leu His Asp Leu Glu
            900             905             910
Ile Arg Gly Ala Gly Asn Ile Leu Gly Thr Asp Gln Ser Gly His Ile
    915             920             925
Gly Thr Ile Gly Phe Asn Leu Tyr Cys Lys Leu Leu Lys Lys Ala Val
    930             935             940
Ser Ala Leu Lys Lys His Thr Ser Pro Leu Leu Phe Asn Asp Asp Val
945             950             955             960
Lys Ile Glu Phe Pro Tyr Asn Ser Arg Ile Pro Asp Thr Tyr Ile Glu
            965             970             975
Thr Gly Ser Met Arg Ile Glu Phe Tyr Gln Lys Ile Gly Asn Ala Glu
            980             985             990
Ser Ser Glu Glu Leu Thr Ala Ile Gln Glu Glu Met Arg Asp Arg Phe
    995             1000            1005
Gly Pro Leu Pro Gln Glu Ile Cys Trp Leu Phe Ala Leu Ala Glu Ile
    1010            1015            1020
Arg Leu Phe Ala Leu Gln His Gly Ile Ser Ser Ile Lys Gly Thr Ala
1025            1030            1035            1040
Asn Ala Leu Tyr Val Gln Lys Cys Leu Ser Lys Ser Glu Gln Thr Lys
            1045            1050            1055
Lys Thr Leu Pro Tyr Ala Leu Ser Pro Thr Pro Glu Leu Leu Val Lys
            1060            1065            1070
Glu Val Ile Glu Ser Ile Glu Arg Gly Phe Leu Ile Asn Ala Ser
    1075            1080            1085


        <210> 894
        <211> 876
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 894
Glu Phe Phe Phe Met Leu Ser Asn Thr Ile Arg Ser Asn Phe Leu Lys
    1               5               10              15
Phe Tyr Ala Asn Arg His His Thr Ile Leu Pro Ser Ser Pro Val Phe
            20              25              30
Pro His Asn Asp Pro Ser Ile Leu Phe Thr Asn Ala Gly Met Asn Gln
            35              40              45
Phe Lys Asp Ile Phe Leu Asn Lys Glu Lys Val Ser Tyr Ser Arg Ala
    50              55              60
Thr Thr Ser Gln Lys Cys Ile Arg Ala Gly Gly Lys His Asn Asp Leu
65              70              75              80
```

1104

```
Asp Asn Val Gly His Thr Ser Arg His Leu Thr Phe Phe Glu Met Leu
            85                  90                      95
Gly Asn Phe Ser Phe Gly Asp Tyr Phe Lys Ala Glu Ala Ile Ala Phe
            100                 105                     110
Ala Trp Glu Val Ser Leu Ser Val Phe Asn Phe Asn Pro Glu Gly Ile
            115                 120                     125
Tyr Ala Thr Val His Glu Lys Asp Asp Glu Ala Phe Ala Leu Trp Glu
    130                 135                 140
Ala Tyr Leu Pro Thr Asp Arg Ile Phe Arg Leu Thr Asp Lys Asp Asn
145                 150                 155                     160
Phe Trp Ser Met Ala Asn Thr Gly Pro Cys Gly Tyr Cys Ser Glu Leu
                165                 170                     175
Leu Phe Asp Arg Gly Pro Ser Phe Gly Asn Ala Ser Ser Pro Leu Asp
            180                 185                 190
Asp Thr Asp Gly Glu Arg Phe Leu Glu Tyr Trp Asn Leu Val Phe Met
            195                 200                 205
Glu Phe Asn Arg Thr Ser Glu Gly Ser Leu Leu Ala Leu Pro Asn Lys
    210                 215                 220
His Val Asp Thr Gly Ala Gly Leu Glu Arg Leu Val Ser Leu Ile Ala
225                 230                 235                     240
Gly Thr His Thr Val Phe Glu Ala Asp Val Leu Arg Glu Leu Ile Ala
                245                 250                     255
Lys Thr Glu Gln Leu Ser Gly Lys Val Tyr His Pro Asp Asp Ser Gly
            260                 265                 270
Ala Ala Phe Arg Val Ile Ala Asp His Val Arg Ser Leu Ser Phe Ala
            275                 280                 285
Ile Ala Asp Gly Leu Leu Pro Gly Asn Thr Glu Arg Gly Tyr Val Leu
    290                 295                 300
Arg Lys Ile Leu Arg Arg Ser Val Asn Tyr Gly Arg Arg Leu Gly Phe
305                 310                 315                     320
Arg Asn Pro Phe Leu Ala Glu Ile Val Pro Ser Leu Ala Asp Ala Met
                325                 330                 335
Gly Glu Ala Tyr Pro Glu Leu Lys Asn Ser Leu Ser Gln Ile Gln Lys
            340                 345                 350
Val Leu Thr Leu Glu Glu Glu Ser Phe Phe Lys Thr Leu Asp Arg Gly
            355                 360                 365
Gly Asn Leu Leu Gln Gln Val Leu Lys Ser Ser Ser Ser Ser Ser Cys
    370                 375                 380
Ile Ser Gly Glu Asp Ala Phe Lys Leu Lys Asp Thr Tyr Gly Met Pro
385                 390                 395                     400
Ile Asp Glu Ile Ser Leu Leu Ala Lys Asp Tyr Asp Tyr Ser Val Asp
                405                 410                 415
Met Asp Thr Phe His Lys Leu Glu Gln Glu Ala Lys Glu Arg Ser Arg
            420                 425                 430
Lys Asn Val Val Gln Ser Gln Gly Thr Ser Glu Ser Ile Tyr Asn Glu
            435                 440                 445
Leu His Leu Thr Ser Glu Phe Ile Gly Tyr Asp His Leu Ser Cys Asp
    450                 455                 460
Thr Phe Ile Glu Ala Ile Ile Ser Lys Asp His Ile Val Ser Ser Leu
465                 470                 475                     480
Gln Glu Lys Gln Glu Gly Ala Ile Val Leu Lys Val Ser Pro Phe Tyr
                485                 490                 495
Ala Glu Lys Gly Gly Gln Val Gly Asp Ser Gly Glu Ile Phe Cys Ser
            500                 505                 510
Glu Gly Thr Phe Ile Val Thr His Thr Thr Ser Pro Lys Ala Gly Leu
    515                 520                 525
Ile Val His His Gly Arg Ile Ser Gln Gly Ser Leu Thr Val Glu Ala
    530                 535                 540
Ala Val Thr Ala Gln Val Asn Arg Tyr Arg Arg Lys Arg Ile Ala Asn
545                 550                 555                     560
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Asn His Thr Ala Cys His Leu Leu His Lys Ala Leu Glu Ile Thr Leu
              565             570             575
Gly Asp His Ile Arg Gln Ala Gly Ser Tyr Val Asp Asp Thr Lys Ile
              580             585             590
Arg Leu Asp Phe Thr His Pro Gln Ala Ile Ser Pro Glu Asp Leu Leu
              595             600             605
Cys Ile Glu Thr Leu Val Asn Glu Ser Ile Arg Glu Asn Glu Pro Val
    610             615             620
Asp Ile Arg Glu Ala Leu Tyr Ser Asp Val Met Asn Ser Ser Glu Ile
625             630             635             640
Lys Gln Phe Phe Gly Asp Lys Tyr Ser Asp Val Val Arg Val Val Ser
              645             650             655
Ala Gly His Ser His Glu Leu Cys Gly Gly Thr His Ala Glu Ala Thr
              660             665             670
Gly Asp Ile Gly Phe Phe Arg Ile Thr Lys Glu His Ala Val Ala Met
              675             680             685
Gly Ile Arg Arg Ile Glu Ala Val Thr Gly Glu Lys Ala Glu Ala Thr
              690             695             700
Val His Gln Gln Ser Glu Val Leu Glu Glu Ile Ala Thr Leu Leu Gln
705             710             715             720
Val Pro Arg Asp Gln Ile Val Ser Arg Leu Thr Ala Thr Leu Asp Glu
              725             730             735
Arg Lys Gln Gln Asp Lys Arg Leu Asn Glu Leu Glu Asn Ser Leu Ile
              740             745             750
Gln Thr Lys Leu Asp Lys Leu Ile His Asn Cys His Gln Arg Gln Gly
              755             760             765
Ile Thr Cys Leu Val His His Leu Ala Glu His Glu Asn His Arg Leu
              770             775             780
Gln Gln Tyr Ala Gln Cys Leu His Gln Arg Ile Pro Glu Lys Leu Ile
785             790             795             800
Ser Leu Trp Thr Thr Glu Lys Asn Gly Lys Tyr Ile Val Leu Ser Arg
              805             810             815
Val Ser Asp Asp Leu Ile Thr Gln Gly Val His Ala Gln Asp Leu Leu
              820             825             830
Lys Ala Val Leu Thr Pro Cys Gly Gly Arg Trp Gly Gly Lys Asp Gln
              835             840             845
Ser Ala Gln Gly Ser Ala Pro Ala Leu Pro Ala Thr Glu Val Leu Asn
              850             855             860
Glu Thr Leu Trp Gln Trp Ile Ser Thr Gln Leu Ile
865             870             875

        <210> 895
        <211> 689
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 895
Glu Phe Leu Ala Phe Cys Leu Gly Ile Ser Tyr Ser Cys Cys Phe Tyr
1               5               10              15
Ile Glu Gly Leu Gln Gly Leu Leu Met Ile Asn Lys Glu Leu Asp Ile
              20              25              30
Gly Ile Leu Gly Lys Ile Ala Gly Ala Ile Lys Gln Ile Ser Ile Glu
              35              40              45
Ser Ile Gln Lys Ala Ser Ser Gly His Pro Gly Leu Pro Leu Gly Cys
    50              55              60
Ala Glu Leu Ala Ala Tyr Leu Tyr Gly Tyr Val Leu Arg Gln Asn Pro
65              70              75              80
Arg Asp Pro His Trp Ile Asn Arg Asp Arg Phe Val Leu Ser Ala Gly
              85              90              95
His Gly Ser Ala Leu Leu Tyr Ser Cys Leu His Leu Ala Gly Phe Asp
              100             105             110
```

1106

```
Val Ser Leu Glu Asp Leu Gln Glu Phe Arg Gln Leu His Ser Arg Thr
        115                 120                 125
Pro Gly His Pro Glu Tyr Gly Glu Thr Val Gly Val Glu Ala Thr Thr
        130                 135                 140
Gly Pro Leu Gly Gln Gly Leu Gly Asn Ala Val Gly Met Ala Leu Ser
145                 150                 155                 160
Met Lys Met Leu Glu Ser Arg Phe Asn Arg Pro Gly His Glu Ile Phe
                165                 170                 175
Asn Gly Lys Ile Tyr Cys Leu Ala Gly Asp Gly Cys Phe Met Glu Gly
                180                 185                 190
Val Ser His Glu Val Cys Ser Phe Ala Gly Ser Leu Asn Leu Asn Asn
        195                 200                 205
Leu Val Val Ile Tyr Asp Tyr Asn Asn Val Val Leu Asp Gly Tyr Leu
        210                 215                 220
Asn Glu Ile Ser Val Glu Asp Thr Lys Lys Arg Phe Glu Ala Tyr Gly
225                 230                 235                 240
Trp Asp Val Tyr Glu Ile Asp Gly Tyr Asp Phe Thr His Ile His Glu
                245                 250                 255
Thr Phe Ser Ser Ile Lys Arg Gly Gln Glu Arg Pro Val Leu Val Ile
                260                 265                 270
Ala His Thr Ile Ile Gly His Gly Ser Pro Lys Glu Gly Thr Asn Lys
        275                 280                 285
Ala His Gly Ser Pro Leu Gly Val Glu Gly Thr His Glu Thr Lys Gln
        290                 295                 300
Phe Trp His Leu Pro Glu Glu Lys Phe Phe Val Pro Pro Ala Val Lys
305                 310                 315                 320
Asn Phe Phe Ala His Lys Ile Gln Glu Asp Arg Lys Ala Gln Glu Gln
                325                 330                 335
Trp Leu Asp Glu Val Arg Val Trp Ser Lys Gln Phe Pro Glu Leu His
                340                 345                 350
Glu Glu Phe Val Ala Leu Thr Ser His Lys Leu Pro Lys Asn Leu Glu
        355                 360                 365
Ser Leu Val Gln Ser Val Glu Met Pro Asp Ser Ile Ala Gly Arg Ala
        370                 375                 380
Ala Ser Asn Lys Leu Ile Gln Val Leu Val Gln His Ile Pro Tyr Leu
385                 390                 395                 400
Ile Gly Gly Ser Ala Asp Leu Ser Ser Ser Asp Gly Thr Trp Ile Ala
                405                 410                 415
Asn Glu Lys Val Ile His Thr Tyr Asp Phe Ser Gly Arg Asn Ile Lys
                420                 425                 430
Tyr Gly Val Arg Glu Phe Gly Met Ala Thr Ile Met Asn Gly Leu Ala
        435                 440                 445
Tyr Ser Gln Val Phe Arg Pro Phe Gly Gly Thr Phe Leu Val Phe Ser
        450                 455                 460
Asp Tyr Met Arg Asn Ala Ile Arg Leu Ala Ala Leu Ser Lys Leu Pro
465                 470                 475                 480
Val Ile Tyr Gln Phe Thr His Asp Ser Ile Phe Val Gly Glu Asp Gly
                485                 490                 495
Pro Thr His Gln Pro Val Glu Gln Leu Met Ser Leu Arg Ala Ile Pro
                500                 505                 510
Gly Leu Tyr Val Ile Arg Pro Ala Asp Ala Asn Glu Val Arg Gly Ala
        515                 520                 525
Trp Ile Ala Gly Leu Lys His Thr Gly Pro Thr Val Ile Val Leu Ser
        530                 535                 540
Arg Gln Ala Leu Pro Thr Leu Pro Ala Ala His Arg Pro Phe Lys Asp
545                 550                 555 ·               560
Gly Ile Gly Arg Gly Ala Tyr Ile Val Leu Lys Glu Ser Gly Glu Lys
                565                 570                 575
Pro Asp Tyr Thr Leu Phe Ala Thr Gly Ser Glu Val Ser Leu Ala Leu
        580                 585                 590
```

Ser Val Ala Lys Glu Leu Glu His Leu Asp Lys Gln Val Arg Val Val
              595   600   605
Ser Phe Pro Cys Trp Glu Leu Phe Glu Ala Gln Asp Val Asp Tyr Lys
        610   615   620
Gln Ser Ile Val Gly Gly Asp Leu Gly Ile Arg Val Ser Ile Glu Ala
625   630   635   640
Gly Ser Ala Leu Gly Trp Tyr Lys Tyr Ile Gly Ser Glu Gly Leu Ala
                645   650   655
Ile Ala Met Asp Arg Phe Gly Tyr Ser Gly Ala Ser Asp Asp Val Ser
            660   665   670
Glu Glu Cys Gly Phe Thr Thr Glu Gln Ile Leu Gln Arg Ile Leu Ser
        675   680   685
Gln

        <210> 896
        <211> 312
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 896
Pro Arg Asn Asp Lys Asn Ala Lys Asn Leu Arg Arg Lys His Tyr Lys
  1   5   10   15
Gly Glu Arg Val Ser Lys His Thr Ser Glu Ser Arg Ile Ala Gln Asp
            20   25   30
Met Leu Glu Arg Tyr Ser Gly Ser Ser Val Lys Gln Phe Cys Pro Tyr
            35   40   45
Leu Leu Leu Thr Asn Phe Ser Tyr Tyr Ile Gln Thr Phe Ala Lys Leu
        50   55   60
His Gly Val Pro Val Phe Glu Gly Ser Met Phe Ser Ala Ala His Ala
65   70   75   80
Pro His Leu Lys Thr Ser Ile Leu Asp Phe Lys Leu Gly Ser Pro Gly
            85   90   95
Ala Ala Leu Thr Ile Asp Leu Cys Ser Phe Leu Pro Asp Leu Lys Ala
        100   105   110
Ala Leu Met Leu Gly Met Cys Gly Gly Leu Arg Ser His Tyr Gln Val
        115   120   125
Gly Asp Tyr Phe Val Pro Val Ala Ser Ile Arg Gly Glu Gly Thr Ser
    130   135   140
Asp Ala Tyr Phe Pro Pro Glu Val Pro Ala Leu Ala Asn Phe Val Val
145   150   155   160
Gln Lys Ala Thr Thr Glu Val Leu Glu Asp Lys Lys Ala Asn Tyr His
            165   170   175
Ile Gly Ile Thr His Thr Thr Asn Ile Arg Phe Trp Glu Phe Asn Lys
            180   185   190
Lys Phe Arg Lys Lys Leu Tyr Glu Thr Lys Ala Gln Ser Ala Glu Met
        195   200   205
Glu Cys Ala Thr Leu Phe Ala Ala Gly Tyr Arg Arg Asn Leu Pro Ile
        210   215   220
Gly Ala Leu Leu Leu Ile Ser Asp Leu Pro Leu Arg Lys Glu Gly Ile
225   230   235   240
Lys Thr Lys Ser Ser Gly Asn Phe Ile Phe Asn Thr Tyr Thr Glu Asp
            245   250   255
His Ile Leu Thr Gly Gln Glu Val Ile Glu Asn Leu Glu Lys Val Met
            260   265   270
Leu Lys Arg Ala Ala Ser Asp His Lys Lys Asp Gln Gln Tyr Arg Gly
        275   280   285
Leu Pro His Met Glu Val Gly Glu Ala Asp Asp Thr Met Ala Ser Gly
        290   295   300
Ser Glu Thr Ser Asp Ser Asp Tyr
305   310

1108

<210> 897
<211> 195
<212> PRT
<213> Chlamydia pneumoniae

<400> 897
Glu Ile Asp Cys Phe Met Val Arg Val Ser Thr Ser Glu Phe Arg Val
1   5   10   15
Gly Leu Arg Ile Glu Ile Asp Gly Gln Pro Tyr Leu Ile Leu Gln Asn
            20   25   30
Asp Phe Val Lys Pro Gly Lys Gly Gln Ala Phe Asn Arg Ile Lys Val
            35   40   45
Lys Asn Phe Leu Thr Gly Arg Val Ile Glu Arg Thr Tyr Lys Ser Gly
        50   55   60
Glu Ser Val Glu Thr Ala Asp Ile Val Glu Arg Ser Met Arg Leu Leu
65   70   75   80
Tyr Thr Asp Gln Glu Gly Ala Thr Phe Met Asp Asp Glu Thr Phe Glu
                85   90   95
Gln Glu Val Val Phe Trp Glu Lys Leu Glu Asn Ile Arg Gln Trp Leu
            100   105   110
Leu Glu Asp Thr Ile Tyr Thr Leu Val Leu Tyr Asn Gly Asp Val Val
            115   120   125
Ala Val Glu Pro Pro Ile Phe Met Glu Leu Ser Ile Ala Glu Thr Ala
    130   135   140
Pro Gly Val Arg Gly Asp Thr Ala Ser Gly Arg Val Leu Lys Pro Ala
145   150   155   160
Val Thr Asn Thr Gly Ala Lys Ile Met Val Pro Ile Phe Ile Asp Glu
                165   170   175
Gly Glu Leu Val Lys Val Asp Thr Arg Thr Gly Ser Tyr Glu Ser Arg
            180   185   190
Val Ser Lys
        195

<210> 898
<211> 83
<212> PRT
<213> Chlamydia pneumoniae

<400> 898
Glu Lys Tyr Phe Phe Phe Thr Val Arg Asn Met Glu Ala Lys Lys Ile
1   5   10   15
Lys Glu Leu Ser Lys Glu Ala Gln Leu Leu Lys Lys Leu Arg Glu Lys
            20   25   30
Ser Arg Val Leu Asp Glu Lys Asn Lys Arg Lys Ala Trp Val Ala Lys
        35   40   45
Leu Val Ala Met Pro Glu Ser Ile Arg Glu Ile Glu Lys Glu Glu Arg
    50   55   60
Val Glu Thr Pro Gln Leu Phe Gln Ala Ile Ala Glu Lys Ile Leu Glu
65   70   75   80
Glu Gly Val

<210> 899
<211> 314
<212> PRT
<213> Chlamydia pneumoniae

<400> 899
Asn Phe Ser Leu Asp Ser Asn Thr Val Asp Gln Lys Asn Lys Ser Asn
1   5   10   15

1109

Pro Arg Pro Met Gln Glu Lys Pro Arg His Val His Arg Ile Ile His
              20   25   30
Ile Ser Asp Val His Phe His Val Leu Pro Val Asn Pro Val His Cys
         35   40   45
Phe Asn Lys Arg Leu Lys Gly Leu Leu Arg Lys Val Phe Gly Leu Val
    50   55   60
His Phe Gln Ala Thr Thr Ile Gly Gln Arg Phe Pro Lys Val Val Arg
65   70   75   80
Ser Leu Gly Ala Asp Ser Val Cys Ile Thr Gly Asp Phe Ser Leu Thr
              85   90   95
Ala Met Asp Gly Glu Phe Leu Leu Ala Lys His Phe Val Glu Thr Leu
             100   105   110
Ala Lys His Ser Ser Val Tyr Leu Leu Pro Gly Asn His Asp Val Tyr
         115   120   125
Thr Leu Lys Ser Leu Ala Gln Gln Thr Phe Tyr Thr His Phe Pro Asn
    130   135   140
Asp Gln Leu Gln Gln Asn Lys Val Ser Phe His Lys Ile Thr Asp His
145   150   155   160
Trp Trp Leu Ile Leu Leu Asp Cys Ser Cys Leu Asn Gly Trp Phe Ser
              165   170   175
Ala Asn Gly Val Val His Leu Ala Gln Ile Ser Ala Ile Glu Thr Phe
             180   185   190
Leu Leu Ser Leu Ser Pro Glu Glu Asn Val Ile Ile Ala Asn His Tyr
         195   200   205
Pro Leu Leu Ser Ser Gln Asn Pro Ser His Asp Leu Ile Asn Asn Thr
    210   215   220
His Leu Gln Asn Val Leu Lys Lys Tyr Pro Lys Val Arg Leu Tyr Leu
225   230   235   240
His Gly His Glu His Gln Ala Ala Val Tyr Asn Cys Ala Asp Thr Ser
              245   250   255
Pro Ser Tyr Ile Leu Asn Ser Gly Ser Ile Ser Leu Pro Thr Asn Ser
         260   265   270
Arg Phe His Val Ile Asp Leu Tyr Pro Glu Lys Tyr Gln Val His Thr
    275   280   285
Met Ile Leu Lys Asn Leu Leu Asp Phe Asp Ala Pro Leu Glu Ile Ala
    290   295   300
Asn Glu Ala Thr Trp Asp Cys Gln Lys Leu
305   310

        <210> 900
        <211> 536
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 900
Thr Lys Lys Arg Leu Gly Ser Val Lys Ile Leu Arg Leu Leu Gly Val
1   5   10   15
Cys Met Ser Glu Gln Glu Lys Leu Ser Asn Tyr Asn Ala Asp Lys Lys
              20   25   30
Leu Phe Ser Gly Ile Asp Lys Leu Phe Gln Ile Val Lys Gly Ser Tyr
         35   40   45
Gly Pro Lys Gln Ser Leu Ser Pro Thr Ser Phe Phe Lys Glu Arg Gly
    50   55   60
Phe Tyr Ala Ile Ser Gln Thr Glu Leu Ser Asn Ser Tyr Glu Asn Leu
65   70   75   80
Gly Val Asp Phe Ala Lys Ala Met Val Asn Lys Ile His Lys Glu His
              85   90   95
Ser Asp Gly Ala Thr Thr Gly Leu Ile Leu Leu His Ala Ile Leu Gln
             100   105   110
Glu Ser Tyr Ala Ala Leu Glu Lys Gly Ile Ser Thr His Lys Leu Ile
         115   120   125

1110

```
Ala Ser Leu Lys Leu Gln Gly Glu Lys Leu Gln Glu Ala Leu Gln Gln
    130                 135                 140
Gln Ser Trp Pro Ile Lys Asp Ala Leu Lys Val Arg Asn Ile Ile Phe
145                 150                 155                 160
Ser Ser Leu His Met Pro Thr Ile Ala Asp His Phe Tyr Asn Ala Phe
                165                 170                 175
Ser Val Val Gly Pro Glu Gly Leu Ile Ser Ile Thr Lys Glu Arg Glu
                180                 185                 190
Asn Asp Lys Thr Ser Met Asp Val Phe Gln Gly Phe Lys Ile Pro Ala
                195                 200                 205
Gly Tyr Ala Ser Thr Tyr Phe Val Ser Asp Thr Ala Ser Arg Leu Thr
    210                 215                 220
Arg Ile Ala His Pro Leu Ile Leu Ile Thr Asp Arg Lys Ile Ser Met
225                 230                 235                 240
Ile His Ser Leu Leu Pro Leu Leu Gln Glu Ile Ser Glu Gln Asn Gln
                245                 250                 255
His Leu Ile Ile Phe Cys Glu Asp Ile Asp Pro Asp Val Leu Ala Thr
                260                 265                 270
Leu Val Val Asn Lys Leu Gln Gly Leu Leu Gln Val Thr Val Val Thr
                275                 280                 285
Ile Pro Gln Leu Ser Thr Thr Asn Gln Glu Leu Ala Glu Asp Ile Ala
    290                 295                 300
Leu Phe Thr Gly Thr His Ile Cys Pro Cys Gln Glu Ala Ser His Val
305                 310                 315                 320
Leu Ala Pro Glu Met Val Thr Leu Gly Ser Cys Leu Ser Ile Glu Ile
                325                 330                 335
Ser Glu Ser Gln Thr Thr Leu Ile Gly Gly Leu His Ile Pro Glu Val
                340                 345                 350
Leu Thr Leu Lys Thr Arg Gln Leu Ala Glu Glu Ile Arg Thr Thr Ser
    355                 360                 365
Cys Leu Glu Thr Lys Lys Arg Leu Ile Lys Ser Thr Asn Arg Leu Gln
    370                 375                 380
Ser Ser Val Ala Ile Leu Pro Thr Asp Glu Asp Asn Glu Pro Leu Tyr
385                 390                 395                 400
Thr Leu Ala Leu Lys Ile Met Glu Ser Ala Leu Ser Arg Gly Tyr Val
                405                 410                 415
Pro Gly Gly Gly Val Ala Leu Phe Tyr Ala Ser Leu Thr Leu Gly Thr
                420                 425                 430
Pro Lys Asp Asp Ala Asp Glu Asn Ser Ile Ala Ile Ser Leu Leu Gln
    435                 440                 445
Lys Ala Cys Cys Ala Pro Leu Lys Leu Leu Ala Thr Asn Ala Asp Leu
    450                 455                 460
Asp Gly Asp Ala Val Ile Ala Lys Leu Ser Ser Leu Gly Thr Thr Ser
465                 470                 475                 480
Leu Gly Ile Ser Val Phe Ser Arg Glu Ile Glu Asp Leu Ile Ala Gly
                485                 490                 495
Gly Ile Leu Asp Ser Leu Ala Thr Thr Ser Thr Ile Leu Ala Gln Ala
                500                 505                 510
Leu Asp Thr Ala Ile Leu Val Leu Ser Ser Lys Ile Leu Ile Leu Glu
    515                 520                 525
Asn Gln Tyr Glu Ile Ser Thr Leu
    530                 535

        <210> 901
        <211> 456
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 901
Asn His Arg Cys Cys Arg Gln Asn Tyr Met Arg Ala Met Leu Leu Glu
 1               5                  10                  15
```

```
Asp Trp Val Ser Leu Met Leu Ser Asp Val Ser Cys Pro Lys Cys Asp
        20                  25              30
Lys Lys Ile Thr Gly Phe Ala Ile Asp Ser Gln Gln Val Gln Pro Gly
        35                  40              45
Asp Leu Phe Phe Ala Leu Pro Gly Asn Ala Thr Asp Gly His Gln Phe
        50              55              60
Leu Lys His Ala Ala Thr Ala Gly Ala Val Ala Ala Val Val Ser His
65              70              75                      80
Asp Tyr Gln Gly Asp Ser Phe Gly Leu Glu Leu Ile Arg Val Asp Asp
            85                  90                  95
Thr Lys Ser Ala Leu Gln Glu Ala Gly Ser Asn Gln Cys Asn Leu Phe
        100             105             110
Gln Gly Thr Leu Val Gly Ile Thr Gly Ser Val Gly Lys Thr Thr Thr
        115             120             125
Lys Glu Phe Ser Lys Thr Ile Leu Ser Ser Ile Tyr Lys Thr His Ala
    130             135             140
Ser Pro Lys Ser Tyr Asn Ser Gln Leu Thr Val Pro Leu Ser Leu Leu
145             150             155                     160
Met Ala Glu Gly Asp Glu Asp Val Met Ile Leu Glu Met Gly Val Ser
            165                 170                 175
Glu Pro Gly Asn Met Gln Asp Leu Leu Arg Ile Val Gln Pro Glu Ile
            180             185                 190
Ala Val Ile Thr His Ile Asn Asp Gln His Ala Met His Phe Pro Gln
        195             200             205
Gly Ile Gln Glu Ile Leu Lys Glu Lys Ser Tyr Ile Leu Gln Lys Ser
    210             215             220
Lys Leu Gln Leu Leu Pro Lys Asp Ser Pro Tyr Tyr Leu Asp Leu Arg
225             230             235                     240
Ser Cys Ser Pro Thr Ala Glu Lys Phe Ser Phe Ser Phe Asn Asp Pro
            245             250             255
Leu Ala Asp Phe Cys Tyr Lys Ala Ile Ser Gly Asp Ser Val Val Ile
            260             265             270
Gln Thr Pro Glu Glu Asn Tyr Cys Leu Pro Ile Ala Phe Ser Tyr Lys
        275             280             285
Pro Ala Tyr Thr Asn Leu Leu Ile Ala Val Ala Leu Ser Trp Ile Leu
    290             295             300
Glu Val Pro Glu Glu Gly Val Ile Arg Ser Leu Pro Glu Leu Lys Leu
305             310             315                     320
Pro Pro Met Arg Phe Glu His Ser Met Arg Asn Gly Met Gln Val Ile
            325             330                 335
Asn Asp Ala Tyr Asn Ala Cys Pro Glu Ala Met Ile Ala Ala Leu Asp
        340             345             350
Ala Leu Pro Leu Pro Ser Asp Gly Gly Lys Ile Ile Leu Ile Leu Gly
        355             360             365
His Met Ala Glu Leu Gly Arg Tyr Ser Glu Glu Gly His Ala Leu Val
370             375             380
Ala Glu Lys Ala Ala Ser Arg Gly Asp Met Ile Phe Phe Ile Gly Glu
385             390             395                     400
Lys Trp Ile Pro Val Gln Ser Val Leu Lys Ser Tyr Ser Cys Glu Val
            405             410             415
Ser Phe Phe Ser Ser Ala Gln Asp Val Lys Asp Ile Leu Lys Gln Val
            420             425             430
Ala Arg Tyr Gly Asp Val Ile Leu Leu Lys Gly Ser Arg Ala Leu Ala
        435             440             445
Leu Glu Ser Leu Leu Ala Cys Phe
    450             455
```

        <210> 902
        <211> 358
        <212> PRT
        <213> Chlamydia pneumoniae

<400> 902

```
Leu Val Phe Asn Phe Leu Gly Ala Ser Met Ile Pro Leu Ile Pro Met
1               5                   10                  15
Phe Leu Lys Gln Ser Leu Phe Phe Ser Leu Ala Leu Thr Gly Met Thr
            20                  25                  30
Thr Leu Val Leu Thr Val Ala Leu Gly Val Pro Val Met Lys Trp Leu
            35                  40                  45
Lys Arg Lys Asn Tyr Arg Asp Tyr Ile His Lys Glu Tyr Cys Glu Lys
        50                  55                  60
Leu Glu Met Leu His Lys Asp Lys Ala Glu Val Pro Thr Gly Gly Gly
65                  70                  75                  80
Val Leu Leu Phe Ile Ser Leu Ile Ala Ser Leu Leu Val Trp Leu Pro
                85                  90                  95
Trp Gly Lys Phe Ser Thr Trp Phe Phe Ile Ile Leu Leu Thr Cys Tyr
            100                 105                 110
Ala Gly Leu Gly Trp Tyr Asp Asp Arg Ile Lys Ile Lys Arg Lys Gln
            115                 120                 125
Gly His Gly Leu Lys Ala Lys His Lys Phe Met Val Gln Ile Ala Ile
        130                 135                 140
Ala Ala Phe Thr Leu Ile Ala Leu Pro Tyr Ile Tyr Gly Ser Thr Glu
145                 150                 155                 160
Pro Leu Trp Thr Leu Lys Ile Pro Phe Met Glu Gly Met Leu Ser Leu
            165                 170                 175
Pro Phe Trp Leu Gly Lys Val Phe Cys Leu Gly Leu Ala Leu Val Ala
            180                 185                 190
Ile Ile Gly Thr Ser Asn Ala Val Asn Leu Thr Asp Gly Leu Asp Gly
        195                 200                 205
Leu Ala Ala Gly Thr Met Ser Phe Ala Ala Leu Gly Phe Ile Phe Val
    210                 215                 220
Ala Leu Arg Ser Ser Thr Ile Pro Ile Ala Gln Asp Val Ala Tyr Val
225                 230                 235                 . 240
Leu Ala Ala Leu Val Gly Ala Cys Ile Gly Phe Leu Trp Tyr Asn Gly
            245                 250                 255
Phe Pro Ala Gln Leu Phe Met Gly Asp Thr Gly Ser Leu Leu Leu Gly
            260                 265                 270
Gly Leu Leu Gly Ser Cys Ala Val Met Leu Arg Ala Glu Cys Ile Leu
    275                 280                 285
Val Val Ile Gly Gly Val Phe Val Ala Glu Ala Gly Ser Val Ile Leu
    290                 295                 300
Gln Val Leu Ser Cys Arg Leu Arg Lys Lys Arg Leu Phe Leu Cys Ser
305                 310                 315                 320
Pro Leu His His His Tyr Glu Tyr Gln Gly Leu Pro Glu Thr Lys Ile
            325                 330                 335
Val Met Arg Phe Trp Ile Phe Ser Phe Val Cys Ala Gly Leu Gly Ile
            340                 345                 350
Ala Ala Val Leu Trp Arg
        355
```

<210> 903
<211> 433
<212> PRT
<213> Chlamydia pneumoniae

<400> 903

```
Phe Cys Met Arg Arg Ser Arg Tyr Ser Gly Cys Leu Met Glu Ile Asp
1               5                   10                  15
Met Cys Gln Arg Ile Leu Ile Leu Gly Thr Gly Ile Thr Gly Lys Ser
            20                  25                  30
Val Ala Arg Phe Leu Tyr Gln Gln Gly His Tyr Leu Ile Gly Ala Asp
            35                  40                  45
```

Asn Ser Leu Glu Ser Leu Ile Ser Val Asp His Leu His Asp Arg Leu
        50   55   60

Leu Met Gly Ala Ser Glu Phe Pro Glu Asn Ile Asp Leu Val Ile Arg
65   70   75   80

Ser Pro Gly Ile Lys Pro Tyr His Pro Trp Val Glu Gln Ala Val Ser
                85   90   95

Leu Lys Ile Pro Val Val Thr Asp Ile Gln Val Ala Leu Lys Thr Pro
                100   105   110

Glu Phe Gln Arg Tyr Pro Ser Phe Gly Ile Thr Gly Ser Asn Gly Lys
        115   120   125

Thr Thr Thr Thr Leu Phe Leu Thr His Leu Leu Asn Thr Leu Gly Ile
        130   135   140

Pro Ala Ile Ala Met Gly Asn Ile Gly Leu Pro Ile Leu Asp His Met
145   150   155   160

Gly Gln Pro Gly Val Arg Val Val Glu Ile Ser Ser Phe Gln Leu Ala
                165   170   175

Thr Gln Glu Glu His Ile Pro Ala Leu Ser Gly Ser Val Phe Leu Asn
        180   185   190

Phe Ser Arg Asn His Leu Asp Tyr His Arg Asn Leu Asp Ala Tyr Phe
        195   200   205

Asp Ala Lys Leu Arg Ile Gln Lys Cys Leu Arg Gln Asp Lys Thr Phe
        210   215   220

Trp Val Trp Glu Glu Cys Ser Leu Gly Asn Ser Tyr Gln Ile Tyr Ser
225   230   235   240

Glu Glu Ile Glu Glu Ile Leu Asp Lys Gly Asp Ala Leu Lys Pro Ile
                245   250   255

Tyr Leu His Asp Arg Asp Asn Tyr Cys Ala Ala Tyr Ala Leu Ala Asn
        260   265   270

Glu Val Gly Trp Val Ser Pro Glu Gly Phe Leu Lys Ala Ile Arg Thr
        275   280   285

Phe Glu Lys Pro Ala His Arg Leu Glu Tyr Leu Gly Lys Lys Asp Gly
        290   295   300

Val His Tyr Ile Asn Asp Ser Lys Ala Thr Thr Val Thr Ala Val Glu
305   310   315   320

Lys Ala Leu Met Ala Val Gly Lys Asp Val Ile Val Ile Leu Gly Gly
                325   330   335

Lys Asp Lys Gly Gly Asp Phe Pro Ala Leu Ala Ser Val Leu Ser Gln
        340   345   350

Thr Thr Lys His Val Ile Ala Met Gly Glu Cys Arg Gln Thr Ile Ala
        355   360   365

Asp Ala Leu Ser Glu Lys Ile Pro Leu Thr Leu Ser Lys Asp Leu Gln
        370   375   380

Glu Ala Val Ser Ile Ala Gln Thr Ile Ala Gln Glu Gly Asp Thr Val
385   390   395   400

Leu Leu Ser Pro Gly Cys Ala Ser Phe Asp Gln Phe Gln Ser Phe Lys
                405   410   415

Glu Arg Gly Ala Tyr Phe Lys Leu Leu Ile Arg Glu Met Gln Ala Val
        420   425   430

Arg

        <210> 904
        <211> 245
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 904
Ala Val Asp Gln Arg Asn Ala Gly Ser Glu Val Asn Met Asn Arg Arg
1   5   10   15
Asp Met Val Ile Thr Ala Val Val Val Asn Ala Ile Leu Leu Val Ala
                20   25   30

```
Leu Phe Val Thr Ser Lys Arg Ile Gly Val Lys Asp Tyr Asp Glu Gly
        35                  40                  45
Phe Arg Asn Phe Ala Ser Ser Lys Val Thr Gln Ala Val Val Ser Glu
    50                  55                  60
Glu Lys Val Ile Glu Lys Pro Val Val Ala Glu Val Pro Ser Arg Pro
65                  ·70          ·          75                  80
Ile Ala Lys Glu Thr Leu Ala Ala Gln Phe Ile Glu Ser Lys Pro Val
                85                  90                  95
Ile Val Thr Thr Pro Pro Val Pro Val Val Ser Glu Thr Pro Glu Val
                100             105             110
Pro Thr Val Ala Val Pro Pro Gln Pro Val Arg Glu Thr Val Lys Glu
                115             120             125
Glu Gln Ala Pro Tyr Ala Thr Val Val Val Lys Lys Gly Asp Phe Leu
        130             135             140
Glu Arg Ile Ala Arg Ala Asn His Thr Thr Val Ala Lys Leu Met Gln
145             150             155                 160
Ile Asn Asp Leu Thr Thr Thr Gln Leu Lys Ile Gly Gln Val Ile Lys
                165             170             175
Val Pro Thr Ser Gln Asp Val Ser Asn Glu Lys Thr Pro Gln Thr Gln
                180             185             190
Thr Ala Asn Pro Glu Asn Tyr Tyr Ile Val Gln Glu Gly Asp Ser Pro
        195             200             205
Trp Thr Ile Ala Leu Arg Asn His Ile Arg Leu Asp Asp Leu Leu Lys
    210             215             220
Met Asn Asp Leu Asp Glu Tyr Lys Ala Arg Arg Leu Lys Pro Gly Asp
225             230             235                 240
Gln Leu Arg Ile Arg
                245


        <210> 905
        <211> 391
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 905
Ser Lys Gln Ser Leu Ser Met Lys Trp Phe Val Ile Ser Cys Leu Leu
1               5                   10                  15
Gly Ile Phe Ser Leu Gly Leu Ile Met Val Phe Asp Thr Ser Ser Ala
                20                  25                  30
Glu Val Leu Asp Arg Ser Leu Glu Cys Ser Thr His Lys Ala Leu Ile
        35                  40                  45
Arg Gln Val Thr Tyr Leu Ile Leu Gly Leu Gly Val Ala Ser Leu Leu
    50                  55                  60
Tyr Met Met Glu Trp Arg Asp Phe Leu Lys Ile Ser Pro Val Leu Leu
65                  70                  75                  80
Ser Gly Ala Ala Leu Ala Leu Ile Cys Val Phe Ile Pro Gly Leu Gly
                85                  90                  95
Ile Cys Arg Asn Gly Ala Arg Arg Trp Leu Gly Phe Gly Gln Leu Thr
                100             105             110
Ile Gln Pro Ser Glu Phe Val Lys Tyr Leu Val Pro Ile Val Ala Leu
        115             120             125
Tyr Phe Leu Thr Phe Ser Ser Leu Tyr Gln Lys Gln Leu Lys Met Phe
    130             135             140
Leu Lys Leu Thr Ala Ile Leu Phe Ile Pro Ile Leu Leu Ile Ala Ile
145             150             155                 160
Glu Pro Asp Asn Gly Ser Ala Ala Val Ile Ser Ala Ser Leu Ile Pro
                165             170             175
Val Phe Ile Met Thr Ser Val Arg Leu Arg Tyr Trp Leu Leu Pro Leu
                180             185             190
Leu Cys Val Leu Ile Ala Gly Gly Ala Leu Ala Tyr Arg Met Pro Tyr
                195             200             205
```

```
Val Arg Tyr Arg Leu Asn Val Tyr Leu His Pro Glu Leu Asp Ile Lys
    210                 215                 220
Gly Arg Gly His Gln Pro Tyr Gln Ala Lys Ile Ala Ala Gly Ser Gly
225                 230                 235                 240
Lys Leu Leu Gly Lys Gly Pro Gly Ala Ser Leu Gln Lys Leu Thr Tyr
                245                 250                 255
Leu Pro Glu Ala Gln Asn Asp Tyr Ile Ala Ala Ile Tyr Ala Glu Glu
                260                 265                 270
Phe Gly Phe Leu Gly Met Leu Val Leu Ile Leu Leu Tyr Met Cys Phe
                275                 280                 285
Val Tyr Gly Gly Tyr Ala Ile Ala Ile Lys Ala Ser Ser Leu Glu Gly
    290                 295                 300
Ala Ala Leu Ala Met Val Ile Thr Leu Ile Ile Ser Met Gln Ala Phe
305                 310                 315                 320
Met Asn Leu Gly Val Val Ser Gly Leu Leu Pro Ser Lys Gly Val Asn
                325                 330                 335
Leu Pro Phe Phe Ser Gln Gly Gly Ser Ser Leu Ile Ala Asn Met Cys
                340                 345                 350
Gly Val Thr Leu Leu Leu Lys Val Tyr Asp Glu Glu Asn Ser Lys Ser
                355                 360                 365
Ser Leu Gly Cys Arg Arg Phe Arg Arg Pro His Cys Pro Ser Ser Leu
    370                 375                 380
Gly Lys Gly Ser Phe Phe Ser
385                 390

        <210> 906
        <211> 359
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 906
Arg Tyr Met Met Lys Lys Ile Arg Lys Val Ala Leu Ala Val Gly Gly
1                   5                   10                  15
Ser Gly Gly His Ile Val Pro Ala Leu Ser Val Lys Glu Ala Phe Ser
                20                  25                  30
Arg Glu Gly Ile Asp Val Leu Leu Leu Gly Lys Gly Leu Lys Asn His
            35                  40                  45
Pro Ser Leu Gln Gln Gly Ile Ser Tyr Arg Glu Ile Pro Ser Gly Leu
        50                  55                  60
Pro Thr Val Leu Asn Pro Ile Lys Ile Met Ser Arg Thr Leu Ser Leu
65                  70                  75                  80
Cys Ser Gly Tyr Leu Lys Ala Arg Lys Glu Leu Lys Ile Phe Asp Pro
                85                  90                  95
Asp Leu Val Ile Gly Phe Gly Ser Tyr His Ser Leu Pro Val Leu Leu
                100                 105                 110
Ala Gly Leu Ser His Lys Ile Pro Leu Phe Leu His Glu Gln Asn Leu
        115                 120                 125
Val Pro Gly Lys Val Asn Gln Leu Phe Ser Arg Tyr Ala Arg Gly Ile
    130                 135                 140
Gly Val Asn Phe Ser Pro Val Thr Lys His Phe Arg Cys Pro Ala Glu
145                 150                 155                 160
Glu Val Phe Leu Pro Lys Arg Ser Phe Ser Leu Gly Ser Pro Met Met
                165                 170                 175
Lys Arg Cys Thr Asn His Thr Pro Thr Ile Cys Val Val Gly Gly Ser
                180                 185                 190
Gln Gly Ala Gln Ile Leu Asn Thr Cys Val Pro Gln Ala Leu Val Lys
        195                 200                 205
Leu Val Asn Lys Tyr Pro Asn Met Tyr Val His His Ile Val Gly Pro
    210                 215                 220
Lys Ser Asp Val Met Lys Val Gln His Val Tyr Asn Arg Gly Glu Val
225                 230                 235                 240
```

1116

```
Leu Cys Cys Val Lys Pro Phe Glu Glu Gln Leu Leu Asp Val Leu Leu
            245                 250                 255
Ala Ala Asp Leu Val Ile Ser Arg Ala Gly Ala Thr Ile Leu Glu Glu
            260                 265                 270
Ile Leu Trp Ala Lys Val Pro Gly Ile Leu Ile Pro Tyr Pro Gly Ala
            275                 280                 285
Tyr Gly His Gln Glu Val Asn Ala Lys Phe Phe Val Asp Val Leu Glu
            290                 295                 300
Gly Gly Thr Met Ile Leu Glu Lys Glu Leu Thr Glu Lys Leu Leu Val
305                 310                 315                 320
Glu Lys Val Thr Phe Ala Leu Asp Ser His Asn Arg Glu Lys Gln Arg
            325                 330                 335
Asn Ser Leu Ala Ala Tyr Ser Gln Gln Arg Ser Thr Lys Thr Phe His
            340                 345                 350
Ala Phe Ile Cys Glu Cys Leu
            355
```

```
<210> 907
<211> 812
<212> PRT
<213> Chlamydia pneumoniae
```

```
<400> 907
```

```
Val His Tyr Met Lys Gly Thr Pro Gln Tyr His Phe Ile Gly Ile Gly
1               5                   10                  15
Gly Ile Gly Met Ser Ala Leu Ala His Ile Leu Leu Asp Arg Gly Tyr
            20                  25                  30
Glu Val Ser Gly Ser Asp Leu Tyr Glu Ser Tyr Thr Ile Glu Ser Leu
            35                  40                  45
Lys Ala Lys Gly Ala Arg Cys Phe Ser Gly His Asp Ser Ser His Val
            50                  55                  60
Pro His Asp Ala Val Val Val Tyr Ser Ser Ser Ile Ala Pro Asp Asn
65                  70                  75                  80
Val Glu Tyr Leu Thr Ala Ile Gln Arg Ser Ser Arg Leu Leu His Arg
            85                  90                  95
Ala Glu Leu Leu Ser Gln Leu Met Glu Gly Tyr Glu Ser Ile Leu Val
            100                 105                 110
Ser Gly Ser His Gly Lys Thr Gly Thr Ser Ser Leu Ile Arg Ala Ile
            115                 120                 125
Phe Gln Glu Ala Gln Lys Asp Pro Ser Tyr Ala Ile Gly Gly Leu Ala
            130                 135                 140
Ala Asn Cys Leu Asn Gly Tyr Ser Gly Ser Ser Lys Ile Phe Val Ala
145                 150                 155                 160
Glu Ala Asp Glu Ser Asp Gly Ser Leu Lys His Tyr Thr Pro Arg Ala
            165                 170                 175
Val Val Ile Thr Asn Ile Asp Asn Glu His Leu Asn Asn Tyr Ala Gly
            180                 185                 190
Asn Leu Asp Asn Leu Val Gln Val Ile Gln Asp Phe Ser Arg Lys Val
            195                 200                 205
Thr Asp Leu Asn Lys Val Phe Tyr Asn Gly Asp Cys Pro Ile Leu Lys
            210                 215                 220
Gly Asn Val Gln Gly Ile Ser Tyr Gly Tyr Ser Pro Glu Cys Gln Leu
225                 230                 235                 240
His Ile Val Ser Tyr Asn Gln Lys Ala Trp Gln Ser His Phe Ser Phe
            245                 250                 255
Thr Phe Leu Gly Gln Glu Tyr Gln Asp Ile Glu Leu Asn Leu Pro Gly
            260                 265                 270
Gln His Asn Ala Ala Asn Ala Ala Ala Ala Cys Gly Val Ala Leu Thr
            275                 280                 285
Phe Gly Ile Asp Ile Asn Ile Ile Arg Lys Ala Leu Lys Lys Phe Ser
            290                 295                 300
```

1117

```
Gly Val His Arg Arg Leu Glu Arg Lys Asn Ile Ser Glu Ser Phe Leu
305               310            315            320
Phe Leu Glu Asp Tyr Ala His His Pro Val Glu Val Ala His Thr Leu
            325            330            335
Arg Ser Val Arg Asp Ala Val Gly Leu Arg Arg Val Ile Ala Ile Phe
            340            345            350
Gln Pro His Arg Phe Ser Arg Leu Glu Glu Cys Leu Gln Thr Phe Pro
            355            360            365
Lys Ala Phe Gln Glu Ala Asp Glu Val Ile Leu Thr Asp Val Tyr Ser
    370            375            380
Ala Gly Glu Ser Pro Arg Glu Ser Ile Ile Leu Ser Asp Leu Ala Glu
385            390            395            400
Gln Ile Arg Lys Ser Ser Tyr Val His Cys Cys Tyr Val Pro His Gly
            405            410            415
Asp Ile Val Asp Tyr Leu Arg Asn Tyr Ile Arg Ile His Asp Val Cys
            420            425            430
Val Ser Leu Gly Ala Gly Asn Ile Tyr Thr Ile Gly Glu Ala Leu Lys
            435            440            445
Asp Phe Asn Pro Lys Lys Leu Ser Ile Gly Leu Val Cys Gly Gly Lys
    450            455            460
Ser Cys Glu His Asp Ile Ser Leu Leu Ser Ala Gln His Val Ser Lys
465            470            475            480
Tyr Ile Ser Pro Glu Phe Tyr Asp Val Ser Tyr Phe Ile Ile Asn Arg
            485            490            495
Gln Gly Leu Trp Arg Thr Gly Lys Asp Phe Pro His Leu Ile Glu Glu
            500            505            510
Thr Gln Gly Asp Ser Pro Leu Ser Ser Glu Ile Ala Ser Ala Leu Ala
            515            520            525
Lys Val Asp Cys Leu Phe Pro Val Leu His Gly Pro Phe Gly Glu Asp
    530            535            540
Gly Thr Ile Gln Gly Phe Phe Glu Ile Leu Gly Lys Pro Tyr Ala Gly
545            550            555            560
Pro Ser Leu Ser Leu Ala Ala Thr Ala Met Asp Lys Leu Leu Thr Lys
            565            570            575
Arg Ile Ala Ser Ala Val Gly Val Pro Val Val Pro Tyr Gln Pro Leu
            580            585            590
Asn Leu Cys Phe Trp Lys Arg Asn Pro Glu Leu Cys Ile Gln Asn Leu
            595            600            605
Ile Glu Thr Phe Ser Phe Pro Met Ile Val Lys Thr Ala His Leu Gly
            610            615            620
Ser Ser Ile Gly Ile Phe Leu Val Arg Asp Lys Glu Glu Leu Gln Glu
625            630            635            640
Lys Ile Ser Glu Ala Phe Leu Tyr Asp Thr Asp Val Phe Val Glu Glu
            645            650            655
Ser Arg Leu Gly Ser Arg Glu Ile Glu Val Ser Cys Ile Gly His Ser
            660            665            670
Ser Ser Trp Tyr Cys Met Ala Gly Pro Asn Glu Arg Cys Gly Ala Ser
            675            680            685
Gly Phe Ile Asp Tyr Gln Glu Lys Tyr Gly Phe Asp Gly Ile Asp Cys
    690            695            700
Ala Lys Ile Ser Phe Asp Leu Gln Leu Ser Gln Glu Ser Leu Asp Cys
705            710            715            720
Val Arg Glu Leu Ala Glu Arg Val Tyr Arg Ala Met Gln Gly Lys Gly
            725            730            735
Ser Ala Arg Ile Asp Phe Phe Leu Asp Glu Glu Gly Asn Tyr Trp Leu
            740            745            750
Ser Glu Val Asn Pro Ile Pro Gly Met Thr Ala Ala Ser Pro Phe Leu
            755            760            765
Gln Ala Phe Val His Ala Gly Trp Thr Gln Glu Gln Ile Val Asp His
    770            775            780
```

1118

```
Phe Ile Ile Asp Ala Leu His Lys Phe Asp Lys Gln Gln Thr Ile Glu
785                 790             795                     800
Gln Ala Phe Thr Lys Glu Gln Asp Leu Val Lys Arg
                805                 810


        <210> 908
        <211> 199
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 908
Lys Trp Gly Ser Glu Val Leu Glu Leu Val Asn Asp Ser Gln Leu Ser
1               5               10                  15
Arg Glu Ala Ser Ala Phe Arg Leu Asp Ile Asp Phe Phe Ile Leu Asn
            20              25              30
Ile Tyr Pro Phe Phe Arg Asn Phe Lys Asn Ile Glu Leu Cys Phe Phe
            35              40              45
Leu Ser Ile Ser Gln Phe Asn Leu Asp Met Glu Glu Phe Val Ala Tyr
        50              55              60
Ile Val Lys Asn Leu Val Thr Asn Pro Glu Ala Val Glu Ile Arg Ser
65              70              75                  80
Ile Glu Asp Glu Asp Asn Glu Ser Ile Lys Leu Glu Ile Arg Val Ala
            85              90                  95
Ala Glu Asp Ile Gly Lys Ile Ile Gly Arg Arg Gly Asn Thr Ile His
            100             105             110
Ala Leu Arg Thr Ile Leu Arg Arg Val Cys Ser Arg Leu Lys Lys Lys
            115             120             125
Val Gln Ile Asp Leu Val Gln Pro Glu Asn Gly Thr Asp Val Ile Ala
        130             135             140
Asp Gln Asp Tyr Ile Cys Asp Asn Asp Ser Ser Asn Ser Thr Glu Asp
145             150             155                 160
Thr Phe Gly Glu Ser Asp Thr Cys Cys Ser Gly His Cys His Tyr Asp
            165             170             175
Glu Asp Leu Asn Gln Glu Glu Gln Glu Glu Gly Asn Met His His Ser
            180             185             190
Cys Glu Cys Ser Asn His His
            195


        <210> 909
        <211> 124
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 909
Phe Ala Phe Ser Lys Phe Leu Ile Ile Lys Ser Ser Met Thr Ala Val
1               5               10                  15
Leu Ile Leu Thr Ser Phe Pro Ser Glu Glu Ser Ala Arg Ser Leu Ala
            20              25              30
Arg His Leu Ile Thr Glu Arg Leu Ala Ser Cys Val His Val Phe Pro
            35              40              45
Lys Gly Thr Ser Thr Tyr Leu Trp Glu Gly Lys Leu Cys Glu Ser Glu
        50              55              60
Glu His His Ile Gln Ile Lys Ser Ile Asp Ile Arg Phe Ser Glu Ile
65              70              75                  80
Cys Leu Ala Ile Gln Glu Phe Ser Gly Tyr Glu Val Pro Glu Val Leu
            85              90                  95
Leu Phe Pro Ile Glu Asn Gly Asp Pro Arg Tyr Leu Asn Trp Leu Thr
            100             105             110
Ile Leu Ser Tyr Pro Glu Lys Pro Pro Leu Ser Asp
            115                 120
```

1119

<210> 910
<211> 276
<212> PRT
<213> Chlamydia pneumoniae

<400> 910

```
Ile Leu Ala Ile Leu Phe Met Ile Ile Ile Lys Asn Asn Glu Leu Met
1               5                   10                  15
Ile Arg Arg Phe Phe Lys Thr Leu Phe Pro Pro Gly Pro Gln Tyr Ser
                20                  25                  30
Leu Cys Tyr Ala Ser Ile Leu Ile Val Leu Ser Ser Leu Val Cys Val
        35                  40                  45
Pro Thr Phe Cys Trp Leu Phe Leu Pro Glu Leu Ser Leu Ser Lys Phe
        50                  55                  60
Asn Pro Ser Pro Ile Arg Asn Leu Phe Leu Val Ser Ser Thr Leu Ser
65                  70                  75                  80
Lys Val Pro Pro Thr Ala Ile Ala Glu His Leu Arg Leu Ser Ala Asp
                85                  90                  95
Ala Pro Thr Tyr Leu His Glu Phe Ser Ile Lys Glu Ala Glu Ser Ser
            100                 105                 110
Leu His Ala Leu Gly Ile Phe Ser Ser Leu Val Ile Glu Lys Ser Pro
        115                 120                 125
Asp Asn Lys Gly Ile Thr Ile Phe Tyr Thr Leu Gln Thr Pro Ile Ala
        130                 135                 140
Tyr Val Gly Asn Arg Ser Asn Thr Leu Cys Asn Leu Glu Gly Ser Cys
145                 150                 155                 160
Phe Leu Gly Gln Pro Tyr Phe Pro Ser Leu Asn Leu Pro Gln Ile Phe
                165                 170                 175
Phe Ser Gln Glu Asp Leu Lys Met Gln Lys Leu Pro Lys Glu Lys Met
            180                 185                 190
Leu Phe Thr Lys Ile Leu Leu Lys Glu Leu Ala Met Glu Ser Pro Lys
        195                 200                 205
Ile Ile Asp Leu Ser Leu Ser Asp Ala Tyr Pro Gly Glu Ile Ile Val
        210                 215                 220
Thr Leu Ser Ser Gly Ser Leu Leu Arg Leu Pro Ile Lys Thr Leu Asp
225                 230                 235                 240
Arg Ala Leu Asp Leu Tyr Lys His Met Lys Lys Ser Pro Val Ile Glu
                245                 250                 255
Ser Glu Lys Gln Tyr Val Tyr Asp Leu Arg Phe Pro Asn Phe Leu Leu
            260                 265                 270
Leu Lys Ala Leu
        275
```

<210> 911
<211> 125
<212> PRT
<213> Chlamydia pneumoniae

<400> 911

```
Ile Ile Ser Leu Ile Phe Thr Arg Phe Leu Leu Glu Arg Leu Leu Met
1               5                   10                  15
Asn Leu Ser Ala Lys Glu Tyr Gly Asp Ile Ile Val Ile Tyr Leu Gln
                20                  25                  30
Gly Ser Leu Asp Ala Val Ser Val Pro Ser Val Gln Glu Tyr Leu Glu
        35                  40                  45
Gln Phe Ile Gln Lys Lys His Leu Lys Ile Ala Leu Asn Phe Thr Asp
        50                  55                  60
Val Ser Tyr Ile Ser Ser Ala Gly Ile Arg Leu Leu Leu Ser Asn Phe
65                  70                  75                  80
Lys Leu Val Gln Ser Leu Gly Gly Lys Met Cys Leu Cys Cys Val Lys
                85                  90                  95
```

Glu Ser Val Thr Glu Val Met Arg Ile Ala Gly Leu Asp Gln Leu Ile
          100   105   110
Leu Leu Cys Gln Ser Glu Gln Glu Cys Leu Ser Lys Leu
          115   120   125

      <210> 912
      <211> 345
      <212> PRT
      <213> Chlamydia pneumoniae

      <400> 912
Phe Leu Tyr Met Leu Pro Phe Glu Phe Glu Phe Asn Thr Thr Ser Ser
  1   5   10   15
Pro Glu Cys Asp Val Cys Leu Asp Pro Gln Lys Leu Phe Val Lys Leu
          20   25   30
Phe Lys Arg Thr Ile Val Leu Leu Ser Gly Pro Thr Gly Ser Gly Lys
          35   40   45
Thr Asp Val Ser Leu Ala Leu Ala Pro Met Ile Asp Gly Glu Ile Val
          50   55   60
Ser Val Asp Ser Met Gln Val Tyr Gln Gly Met Asp Ile Gly Thr Ala
65   70   75   80
Lys Val Ser Leu Lys Ala Arg Gln Glu Ile Pro His His Leu Ile Asp
          85   90   95
Ile Arg His Val Gln Glu Pro Phe Asn Val Val Asp Phe Tyr Tyr Glu
          100   105   110
Ala Ile Gln Ala Cys Gln Asn Ile Leu Ser Arg Asn Lys Val Pro Ile
          115   120   125
Leu Val Gly Gly Ser Gly Phe Tyr Phe His Ala Phe Leu Ser Gly Pro
          130   135   140
Pro Lys Gly Pro Ala Ala Asp Pro Gln Ile Arg Glu Gln Leu Glu Ala
145   150   155   160
Ile Ala Glu Glu His Gly Val Ser Ala Leu Tyr Glu Asp Leu Leu Leu
          165   170   175
Lys Asp Pro Glu Tyr Ala Gln Thr Ile Thr Lys Asn Asp Lys Asn Lys
          180   185   190
Ile Ile Arg Gly Leu Glu Ile Ile Gln Leu Thr Gly Lys Lys Val Ser
          195   200   205
Asp His Glu Trp Asp Ile Val Pro Lys Ala Ser Arg Glu Tyr Cys Cys
          210   215   220
Arg Ala Trp Phe Leu Ser Pro Glu Thr Glu Phe Leu Lys Asn Asn Ile
225   230   235   240
Gln Met Arg Cys Glu Ala Met Leu Gln Glu Gly Leu Leu Glu Glu Val
          245   250   255
Arg Gly Leu Leu Asn Gln Gly Ile Arg Glu Asn Pro Ser Ala Phe Lys
          260   265   270
Ala Ile Gly Tyr Arg Glu Trp Ile Glu Phe Leu Asp Asn Gly Glu Lys
          275   280   285
Leu Glu Glu Tyr Glu Glu Thr Lys Arg Lys Phe Val Ser Asn Ser Trp
290   295   300
His Tyr Thr Lys Lys Gln Lys Thr Trp Phe Lys Arg Tyr Ser Ile Phe
305   310   315   320
Arg Glu Leu Pro Thr Leu Gly Leu Ser Ser Asp Ala Ile Ala Gln Lys
          325   330   335
Ile Ala Lys Asp Tyr Leu Leu Tyr Ser
          340   345

      <210> 913
      <211> 365
      <212> PRT
      <213> Chlamydia pneumoniae

1121

<400> 913

```
Ser Leu Leu Leu Ala Ile Phe Asn Val Asn Tyr Phe Met Asn Leu Cys
1               5                   10                  15
Lys Arg Ile Ser Phe Glu Glu Gly Leu Glu Leu Phe Val Ser Ser Pro
            20                  25                  30
Ile Glu Arg Leu Gln Glu Arg Ala Asp Ala Ile Arg Lys Glu Arg Tyr
        35                  40                  45
Pro Ser Asn Glu Val Thr Tyr Val Leu Asp Ala Asn Pro Asn Tyr Thr
    50                  55                  60
Asn Ile Cys Lys Ile Asp Cys Thr Phe Cys Ala Phe Tyr Arg Lys Pro
65              70                  75                  80
Lys Ser Pro Asp Ala Tyr Leu Leu Ser Phe Asp Glu Val Arg Ser Leu
            85                  90                  95
Leu Gln Arg Tyr Val Ser Ser Gly Val Lys Thr Val Leu Leu Gln Gly
        100                 105                 110
Gly Val His Pro Gly Leu Gly Ile Asp Tyr Leu Glu Glu Leu Val Arg
        115                 120                 125
Ile Thr Val Gln Glu Phe Pro Ser Ile His Pro His Phe Phe Ser Ala
    130                 135                 140
Val Glu Ile Glu His Ala Cys Arg Val Ser Gly Ile Ser Ile Glu Gln
145                 150                 155                 160
Gly Leu Gln Arg Leu Trp Asp Ala Gly Gln Arg Thr Ile Pro Gly Gly
            165                 170                 175
Gly Ala Glu Ile Leu Ser Glu Arg Val Arg Lys Ile Ile Ser Pro Lys
        180                 185                 190
Lys Met Gln Pro Gly Gly Trp Ile Asn Leu His Lys Leu Ala His Leu
        195                 200                 205
Met Gly Phe Arg Thr Thr Ala Thr Met Met Phe Gly His Val Glu Asn
    210                 215                 220
Pro Glu Asp Ile Leu Ile His Leu Gln Thr Leu Arg Asp Ala Gln Asp
225                 230                 235                 240
Ser Cys Pro Gly Phe Tyr Ser Phe Ile Pro Trp Ser Tyr Lys Pro Gly
                245                 250                 255
Asn Thr Ala Leu Arg Arg Asn Val Pro Gln Gln Ala Ser Ile Glu Thr
            260                 265                 270
Tyr Tyr Arg Ile Leu Ala Leu Gly Arg Ile Phe Leu Asp Asn Phe Asp
        275                 280                 285
His Val Ala Ala Ser Trp Phe Gly Glu Gly Lys Ser Leu Gly Ala Lys
    290                 295                 300
Ala Leu His Tyr Gly Ala Asp Asp Phe Gly Gly Val Ile Leu Asp Glu
305                 310                 315                 320
Ser Val His Lys Ala Thr Gly Trp Ser Ile Gln Ser Ser Glu Glu Glu
            325                 330                 335
Ile Cys Asn Ile Ile Arg Ser Glu Gly Phe Ile Pro Val Glu Arg Asn
        340                 345                 350
Thr Phe Tyr Gln His Ile Ser Cys Thr Val Ser Ser Leu
    355                 360                 365
```

<210> 914
<211> 547
<212> PRT
<213> Chlamydia pneumoniae

<400> 914

```
Val Val Ile Met Asp Asn Ser Asp Asn Ser Phe His Thr Leu Glu Thr
1               5                   10                  15
Glu Gln Gly Ser Phe Leu Asn Asp Glu Leu Ala Val Glu Glu Val Ala
            20                  25                  30
Ser Thr Glu Ser Thr Glu Ile Ser Asp Ala Thr Leu Cys Phe Ala Glu
        35                  40                  45
```

```
Lys Lys Val Ala Phe Ile Leu Asn Lys Met Arg Glu Ala Leu Thr Gly
    50              55              60
Ser Ser Gln Gly Ser Asp Leu Arg Leu Phe Trp Asp Leu Arg Lys Gln
65              70              75              80
Cys Leu Pro Leu Phe Asn Glu Ile Glu Asp Thr Ala Lys Arg Ala Asp
            85              90              95
His Trp Arg Cys Tyr Ile Glu Leu Thr Lys Glu Gly Arg His Leu Lys
            100             105             110
Gly Leu Gln Asp Glu Glu Gly Ser Phe Val Val Gly Gln Ile Asp Leu
        115             120             125
Ala Ile Thr Cys Leu Glu Lys Asp Ile Leu Lys Phe Gln Glu Gly Thr
    130             135             140
Glu Asp Lys Ile Phe Lys Asp Arg Glu Asp Asn Phe Leu Glu Ser Gln
145             150             155             160
Ala Leu Asp Lys His Gln Ala Phe Tyr Lys Gln His His Thr Ser Leu
            165             170             175
Leu Trp Leu Ser Ser Phe Ser Ser Lys Ile Ile Asp Leu Arg Lys Glu
            180             185             190
Leu Ile Asn Val Gly Met Arg Met Arg Leu Lys Ser Lys Phe Phe Gln
            195             200             205
Arg Leu Ser Asn Leu Gly Asn Gln Val Phe Pro Lys Arg Lys Glu Leu
    210             215             220
Ile Glu Lys Val Ser Gln Thr Phe Ala Glu Asp Val Asp Ala Phe Val
225             230             235             240
Ala Lys Tyr Phe Ile Gly Ser Asp Lys Glu Thr Leu Lys Lys Thr Val
            245             250             255
Phe Phe Leu Arg Lys Glu Ile Lys Asn Leu Gln His Ala Ala Lys Arg
            260             265             270
Leu Phe Val Ser Ser His Val Phe Ala Glu Thr Arg Leu Lys Leu Ser
            275             280             285
Lys Cys Trp Asp Gln Leu Lys Gly Met Glu Lys Glu Ile Arg Gln Glu
    290             295             300
Gln Gly Arg Leu Arg Val Val Ser Ala Glu Asn Ser Lys Glu Val Arg
305             310             315             320
Gln Met Leu Ala Glu Val Ser Ser Leu Leu Ile Glu Gly Asn Asp Leu
            325             330             335
Ser Lys Val Arg Lys Asp Leu Glu Gly Ile Ser Lys Lys Ile Arg Ala
            340             345             350
Leu Asp Leu Thr His Asp Asp Val Ile Ser Leu Lys Lys Glu Met Gln
            355             360             365
Gln Leu Phe Asp Gln Leu Arg Glu Lys Gln Asp Ala Ala Glu His Ser
    370             375             380
Tyr Gln Glu Gln Leu Ala Lys Asp Lys Gln Val Lys Lys Glu Ala Ala
385             390             395             400
Arg Ser Leu Ala Glu Arg Ile Thr Thr Phe Ser Lys Thr Cys Ser Glu
            405             410             415
Gly Asn Ile Thr Ser Glu Ser Arg Glu Glu Trp Gln Thr Leu Lys Glu
            420             425             430
Leu Leu Gly Lys Met Ser Phe Leu Pro Pro Glu Lys Ile Ser Leu
            435             440             445
Asp Asn Gln Leu Asn Leu Ala Leu Gln Thr Ile Val Asn Phe Phe Glu
    450             455             460
Glu Gln Leu Leu Ser Ser Pro Asp Ser Arg Glu Lys Leu Val Asn Met
465             470             475             480
Arg Gln Val Leu Lys Gln Arg Arg Glu Arg Arg Gln Glu Leu Lys Asp
            485             490             495
Lys Leu Glu Gln Asp Lys Lys Leu Leu Gly Ser Ser Gly Leu Asp Phe
            500             505             510
Asp Arg Ala Met Gln Tyr Ser Ala Leu Val Glu Glu Asp Lys Arg Ala
            515             520             525
```

```
Leu Glu Glu Leu Asp Ala Ser Ile Leu Glu Leu Lys Gln Gln Ile Gln
    530                 535                 540
Gln Leu Leu
545


        <210> 915
        <211> 79
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 915
Arg Ile Gly Cys Lys Tyr Phe Arg Ile Glu Ala Thr Asp Ser Ala Ile
1               5                   10                  15
Ala Met Arg Arg Asn Cys Ile Tyr Ala Phe Asp Leu Asp Gly Thr Leu
            20                  25                  30
Leu Lys Gly Asn Ser Ser Trp Ser Phe Tyr Cys Tyr Gly Leu Leu Gln
        35                  40                  45
Gly Leu Phe Ser Tyr Lys Thr Leu Pro Pro Cys Ile Tyr Arg Phe Phe
    50                  55                  60
Arg Phe Lys Phe Phe Phe Gly Ile Phe His Pro Ser Ile Ile Arg
65                  70                  75


        <210> 916
        <211> 163
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 916
Val Phe Phe Trp Asp Leu Pro Ser Phe Tyr Tyr Ser Ile Val Thr Arg
1               5                   10                  15
Leu Leu Ser Ser Val Pro Cys Asp Asp Leu Tyr Glu Val Ala Leu Asn
            20                  25                  30
Phe Val Ser Thr Leu Thr Gly Ser Asp Phe Tyr Ala Pro Val Leu Glu
        35                  40                  45
Lys Leu Glu Glu Ala Phe Ala Asp Thr Thr Gly Gln Val Ile Leu Phe
    50                  55                  60
Ser Ser Ser Pro Asp Phe Ile Val His Pro Ile Ala Gln Gln Leu Gly
65                  70                  75                  80
Ile Ser Ser Trp Tyr Ala Ser Cys Tyr Arg Asp Gln Ser Ala Glu Gln
                85                  90                  95
Thr Ile Tyr Lys Lys Cys Leu Thr Gly Asp Lys Lys Ala Gln Ile Leu
            100                 105                 110
Ser Tyr Ile Lys Lys Ile Asn Gln Ala Arg Ser His Thr Phe Ser Asp
        115                 120                 125
His Ile Leu Asp Leu Pro Phe Leu Met Leu Gly Glu Glu Lys Thr Val
    130                 135                 140
Val Arg Pro Gln Gly Arg Leu Lys Lys Met Ala Lys Lys Tyr Tyr Trp
145                 150                 155                 160
Asn Ile Val


        <210> 917
        <211> 139
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 917
Phe His Leu Lys Lys Ser Ser Thr Leu Ser Trp Ile Ile Glu Tyr Pro
1               5                   10                  15
Lys Ala Gly Phe Met Asp Ser Phe Cys Phe Asp Leu Leu Lys Val Ala
            20                  25                  30
```

```
Ala Lys Ala Ile Asp Asp Lys Lys Gly Asn Asn Leu Val Val Leu Asp
        35                  40                  45
Val Arg Thr Ile Ser Glu Phe Thr Asp Tyr Phe Val Phe Val Glu Gly
        50                  55                  60
Ser Val Asn Val His Val Lys Ala Leu Ala Asn Thr Ile Val Glu Glu
65                      70                  75                  80
Leu Lys Lys Gln Lys Val Ser Pro Leu His Val Glu Gly Ile Thr Asp
                85                  90                  95
Gly Asn Trp Val Val Ile Asp Tyr Gly Phe Ile Val Val His Val Phe
                100                 105                 110
Val Ser Glu Ile Arg Gly Lys Tyr Arg Leu Glu Glu Leu Trp Lys Asp
        115                 120                 125
Gly Phe Ile Val Thr Ser Lys Leu Leu Ala Ser
        130                 135
```

        <210> 918
        <211> 424
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 918
```
Leu Leu Asn Gly Val Arg Val Tyr Met Ser Lys Lys Arg Val Val Val
 1              5                  10                  15
Thr Gly Phe Gly Val Val Ser Cys Leu Gly Asn Glu Val Asp Thr Phe
                20                  25                  30
Tyr Asp Asn Leu Leu Ala Gly Val Ser Gly Val Arg Pro Ile Thr Ser
        35                  40                  45
Phe Pro Cys Glu Asp Tyr Ala Thr Arg Phe Ala Gly Trp Ile Pro Glu
        50                  55                  60
Phe Asn Pro Glu Pro Tyr Val Asp Lys Lys Gln Ala Arg Arg Val Asp
65                      70                  75                  80
Pro Phe Ile Thr Tyr Ala Met Val Ala Ala Lys Lys Ala Ile Ala Met
                85                  90                  95
Ser Arg Trp Asp Lys Asp His Leu Pro Ser Asp Pro Val Arg Cys Gly
                100                 105                 110
Val Ile Val Gly Ser Gly Met Gly Gly Leu Ser Thr Leu Asp Gln Gly
        115                 120                 125
Met Glu Arg Leu Leu Val Ile His Lys Lys Leu Ser Pro Phe Phe Ile
        130                 135                 140
Pro Tyr Ile Ile Thr Asn Met Ala Pro Ala Leu Ile Ala Met Asp Phe
145                 150                 155                 160
Gly Leu Met Gly Pro Asn Tyr Ser Ile Ser Thr Ala Cys Ala Thr Gly
                165                 170                 175
Asn Tyr Cys Ile Asp Ala Ala Tyr Gln His Leu Val Ser Gly Arg Ala
                180                 185                 190
Asp Met Ile Ile Cys Gly Gly Thr Glu Ala Ala Val Asn Arg Ile Gly
        195                 200                 205
Leu Glu Gly Phe Ile Ala Asn Arg Ala Leu Ser Glu Arg Asn Asp Ala
        210                 215                 220
Pro Asp Gln Ala Ser Arg Pro Trp Asp Arg Asp Arg Asp Gly Phe Val
225                 230                 235                 240
Leu Gly Glu Gly Ala Gly Ile Leu Val Leu Glu Thr Leu Glu Ser Ala
                245                 250                 255
Leu Arg Arg Asp Ala Pro Ile Phe Ala Glu Met Leu Gly Ser Tyr Val
                260                 265                 270
Thr Cys Asp Ala Phe His Ile Thr Ala Pro Arg Asp Asp Gly Glu Gly
        275                 280                 285
Ile Thr Ala Cys Val Leu Gly Ala Leu Asn Ser Ala Gly Ile Pro Lys
        290                 295                 300
Glu Arg Val Asn Tyr Val Asn Ala His Gly Thr Ser Thr Pro Leu Gly
305                 310                 315                 320
```

```
Ala Lys Ala Ile Asp Asp Lys Lys Gly Asn Asn Leu Val Val Leu Asp
        35                  40                  45
Val Arg Thr Ile Ser Glu Phe Thr Asp Tyr Phe Val Phe Val Glu Gly
        50                  55                  60
Ser Val Asn Val His Val Lys Ala Leu Ala Asn Thr Ile Val Glu Glu
65                      70                  75                  80
Leu Lys Lys Gln Lys Val Ser Pro Leu His Val Glu Gly Ile Thr Asp
                85                  90                  95
Gly Asn Trp Val Val Ile Asp Tyr Gly Phe Ile Val Val His Val Phe
                100                 105                 110
Val Ser Glu Ile Arg Gly Lys Tyr Arg Leu Glu Glu Leu Trp Lys Asp
        115                 120                 125
Gly Phe Ile Val Thr Ser Lys Leu Leu Ala Ser
        130                 135
```

        <210> 918
        <211> 424
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 918
```
Leu Leu Asn Gly Val Arg Val Tyr Met Ser Lys Lys Arg Val Val Val
 1              5                  10                  15
Thr Gly Phe Gly Val Val Ser Cys Leu Gly Asn Glu Val Asp Thr Phe
                20                  25                  30
Tyr Asp Asn Leu Leu Ala Gly Val Ser Gly Val Arg Pro Ile Thr Ser
        35                  40                  45
Phe Pro Cys Glu Asp Tyr Ala Thr Arg Phe Ala Gly Trp Ile Pro Glu
        50                  55                  60
Phe Asn Pro Glu Pro Tyr Val Asp Lys Lys Gln Ala Arg Arg Val Asp
65                      70                  75                  80
Pro Phe Ile Thr Tyr Ala Met Val Ala Ala Lys Lys Ala Ile Ala Met
                85                  90                  95
Ser Arg Trp Asp Lys Asp His Leu Pro Ser Asp Pro Val Arg Cys Gly
                100                 105                 110
Val Ile Val Gly Ser Gly Met Gly Gly Leu Ser Thr Leu Asp Gln Gly
        115                 120                 125
Met Glu Arg Leu Leu Val Ile His Lys Lys Leu Ser Pro Phe Phe Ile
        130                 135                 140
Pro Tyr Ile Ile Thr Asn Met Ala Pro Ala Leu Ile Ala Met Asp Phe
145                 150                 155                 160
Gly Leu Met Gly Pro Asn Tyr Ser Ile Ser Thr Ala Cys Ala Thr Gly
                165                 170                 175
Asn Tyr Cys Ile Asp Ala Ala Tyr Gln His Leu Val Ser Gly Arg Ala
                180                 185                 190
Asp Met Ile Ile Cys Gly Gly Thr Glu Ala Ala Val Asn Arg Ile Gly
        195                 200                 205
Leu Glu Gly Phe Ile Ala Asn Arg Ala Leu Ser Glu Arg Asn Asp Ala
        210                 215                 220
Pro Asp Gln Ala Ser Arg Pro Trp Asp Arg Asp Arg Asp Gly Phe Val
225                 230                 235                 240
Leu Gly Glu Gly Ala Gly Ile Leu Val Leu Glu Thr Leu Glu Ser Ala
                245                 250                 255
Leu Arg Arg Asp Ala Pro Ile Phe Ala Glu Met Leu Gly Ser Tyr Val
                260                 265                 270
Thr Cys Asp Ala Phe His Ile Thr Ala Pro Arg Asp Asp Gly Glu Gly
        275                 280                 285
Ile Thr Ala Cys Val Leu Gly Ala Leu Asn Ser Ala Gly Ile Pro Lys
        290                 295                 300
Glu Arg Val Asn Tyr Val Asn Ala His Gly Thr Ser Thr Pro Leu Gly
305                 310                 315                 320
```

```
Asp Leu Ser Glu Val Leu Ala Val Lys Lys Ala Phe Gly Ser His Val
              325                 330                 335
Arg Asn Leu Arg Met Asn Ser Thr Lys Ser Leu Ile Gly His Cys Leu
              340                 345                 350
Gly Ala Ala Gly Gly Val Glu Ala Val Val Ala Ile Gln Ala Ile Leu
              355                 360                 365
Thr Gly Lys Leu His Pro Thr Ile Asn Leu Asp Asn Pro Ile Ala Glu
      370                 375                 380
Ile Glu Asp Phe Asp Val Val Ala Asn Lys Ala Gln Asp Trp Asp Ile
385                 390                 395                 400
Asp Val Ala Met Ser Asn Ser Phe Gly Phe Gly Gly His Asn Ser Thr
              405                 410                 415
Ile Leu Phe Ser Arg Tyr Val Pro
              420
```

```
        <210> 919
        <211> 162
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 919
Phe Asn Asp Ile Ile Leu Glu Val Cys Thr Leu Val Met Met Lys Thr
  1               5                  10                  15
Lys Tyr Glu Tyr Ser Phe Gly Val Ile Pro Ile Lys Phe Phe Gly Thr
              20                  25                  30
Pro Asp Lys Asn Thr Leu Lys Ala Cys Phe Ile Cys His Thr Arg Gly
              35                  40                  45
Lys His Trp Gly Phe Pro Lys Gly His Ser Glu Asp Lys Glu Gly Pro
      50                  55                  60
Gln Glu Ala Ala Glu Arg Glu Leu Val Glu Glu Thr Gly Leu Ser Val
65                  70                  75                  80
Val Asn Phe Phe Pro Lys Val Leu Ile Glu Gln Tyr Ser Phe Asn Asn
              85                  90                  95
Glu Glu Gln Val Phe Val Arg Lys Glu Val Thr Tyr Phe Leu Ala Glu
              100                 105                 110
Val Arg Gly Asp Ile His Ala Asp Pro Met Glu Ile Cys Asp Ser Gln
              115                 120                 125
Trp Leu Ser Leu Gln Glu Gly Leu Arg Leu Leu Ser Phe Pro Glu Leu
      130                 135                 140
Arg Asp Leu Thr Val Glu Ala Asp Lys Phe Ile Asn Asn Tyr Leu Phe
145                 150                 155                 160
Ser Ser


        <210> 920
        <211> 218
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 920
Glu Leu Leu Met Ser Lys Lys Pro Leu Tyr Val Ala His Pro Trp His
  1               5                  10                  15
Ser Pro Thr Leu Thr Gln Asp Asn Tyr Glu Ser Leu Cys Cys Tyr Ile
              20                  25                  30
Glu Ile Thr Pro Tyr Asp Ser Val Lys Phe Glu Leu Asp Lys Ala Thr
              35                  40                  45
Gly Leu Leu Lys Val Asp Arg Pro Gln Lys Phe Ser Asn Phe Cys Pro
      50                  55                  60
Cys Leu Tyr Gly Leu Leu Pro Gln Thr Tyr Cys Gly Thr Ala Ser Gly
65                  70                  75                  80
```

Asn Tyr Ser Gly Glu Gln Thr Arg Arg Glu Gly Ile Gln Gly Asp Lys
                85   90   95
Asp Pro Leu Asp Val Cys Val Leu Thr Glu Lys Asn Ile His His Gly
                100   105   110
Asn Ile Leu Leu Gln Ala Arg Pro Ile Gly Gly Leu Arg Ile Ile Asp
                115   120   125
Ser Gly Glu Ala Asp Asp Lys Ile Ile Ala Val Leu Glu Asp Asp Leu
        130   135   140
Val Phe Ala Glu Ile Glu Asp Ile Ser Asp Cys Pro Gly Thr Val Leu
145   150   155   160
Asp Met Ile Gln His Tyr Phe Leu Thr Tyr Lys Ala Thr Pro Asn His
                165   170   175
Leu Ile Lys Gly Ser Pro Ala Lys Ile Glu Ile Val Gly Ile Tyr Gly
                180   185   190
Lys Lys Glu Ala Gln Lys Val Ile Gln Leu Ala His Glu Asp Tyr Leu
        195   200   205
Ser Tyr Ile Gly Asp Thr Ala Glu Val Asn
        210   215

        <210> 921
        <211> 352
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 921
Phe Met Lys Tyr Ser Leu Asn Phe Lys Glu Ile Lys Ile Asp Asp Tyr
1   5   10   15
Glu Arg Val Ile Glu Val Thr Cys Ser Lys Val Arg Leu His Ala Ile
                20   25   30
Ile Ala Ile His Gln Thr Ala Val Gly Pro Ala Leu Gly Gly Val Arg
            35   40   45
Ala Ser Leu Tyr Ser Ser Phe Glu Asp Ala Cys Thr Asp Ala Leu Arg
        50   55   60
Leu Ala Arg Gly Met Thr Tyr Lys Ala Ile Ile Ser Asn Thr Gly Thr
65   70   75   80
Gly Gly Gly Lys Ser Val Ile Ile Leu Pro Gln Asp Ala Pro Ser Leu
                85   90   95
Thr Glu Asp Met Leu Arg Ala Phe Gly Gln Ala Val Asn Ala Leu Glu
                100   105   110
Gly Thr Tyr Ile Cys Ala Glu Asp Leu Gly Val Ser Ile Asn Asp Ile
            115   120   125
Ser Ile Val Ala Glu Glu Thr Pro Tyr Val Cys Gly Ile Ala Asp Val
        130   135   140
Ser Gly Asp Pro Ser Ile Tyr Thr Ala His Gly Gly Phe Leu Cys Ile
145   150   155   160
Lys Glu Thr Ala Lys Tyr Leu Trp Gly Ser Ser Ser Leu Arg Gly Lys
                165   170   175
Lys Ile Ala Ile Gln Gly Ile Gly Ser Val Gly Arg Arg Leu Leu Gln
            180   185   190
Ser Leu Phe Phe Glu Gly Ala Glu Leu Tyr Val Ala Asp Val Leu Glu
        195   200   205
Arg Ala Val Gln Asp Ala Ala Arg Leu Tyr Gly Ala Thr Ile Val Pro
    210   215   220
Thr Glu Glu Ile His Ala Leu Glu Cys Asp Ile Phe Ser Pro Cys Ala
225   230   235   240
Arg Gly Asn Val Ile Arg Lys Asp Asn Leu Ala Asp Leu Asn Cys Lys
            245   250   255
Ala Ile Val Gly Val Ala Asn Asn Gln Leu Glu Asp Ser Ser Ala Gly
            260   265   270
Met Met Leu His Glu Arg Gly Ile Leu Tyr Gly Pro Asp Tyr Leu Val
    275   280   285

1127

```
Asn Ala Gly Gly Leu Leu Asn Val Ala Ala Ala Ile Glu Gly Arg Val
    290                 295             300
Tyr Ala Pro Lys Glu Val Leu Leu Lys Val Glu Glu Leu Pro Ile Val
305                 310             315                 320
Leu Ser Lys Leu Tyr Asn Gln Ser Lys Thr Thr Gly Lys Asp Leu Val
            325             330             335
Ala Leu Ser Asp Ser Phe Val Glu Asp Lys Leu Leu Ala Tyr Thr Ser
            340             345             350


        <210> 922
        <211> 331
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 922
Ile Leu Glu Glu Asn Ser Met His Ser Glu Leu Pro Asn Tyr Gln Asn
  1           5                 10              15
Ile Val Glu Ser Val Val Thr Glu Ile Thr Thr Gln Leu Leu Asn Tyr
            20              25              30
Arg Ser Glu His Arg Leu Val Pro Phe Trp Glu Lys Ser Asp Gly Ser
        35              40              45
Phe Ile Thr Ala Ala Asp Tyr Gly Ser Gln Tyr Tyr Leu Lys Gln Gln
    50              55              60
Leu Ala Lys Ala Phe Pro Asn Ile Pro Phe Ile Gly Glu Glu Thr Leu
65              70              75              80
Tyr Pro Asp Gln Asp Asn Glu Lys Ile Pro Glu Ile Leu Lys Phe Thr
            85              90              95
Arg Leu Leu Thr Ser Ser Val Ser Arg Asp Asp Leu Ile Ser Thr Leu
            100             105             110
Val Pro Pro Pro Ser Pro Thr Ser Leu Phe Trp Leu Val Asp Pro Ile
        115             120             125
Asp Gly Thr Ala Gly Phe Ile Arg His Arg Ala Phe Ala Val Ala Ile
    130             135             140
Ser Leu Ile Tyr Glu Tyr Arg Pro Ile Leu Ser Val Met Ala Cys Pro
145             150             155             160
Ala Tyr Asn Gln Thr Phe Lys Leu Tyr Ser Ala Ala Lys Gly His Gly
            165             170             175
Leu Ser Ile Val His Ser Gln Asn Leu Asp Arg Arg Phe Val Tyr Ala
            180             185             190
Asp Arg Lys Gln Thr Lys Gln Phe Cys Glu Ala Ser Leu Ala Ala Leu
    195             200             205
Asn Gln Gln His His Ala Thr Arg Lys Leu Ser Leu Gly Leu Pro Asn
    210             215             220
Thr Pro Ser Pro Arg Arg Val Glu Ser Gln Tyr Lys Tyr Ala Leu Val
225             230             235             240
Ala Glu Gly Ala Val Asp Phe Phe Ile Arg Tyr Pro Phe Ile Asp Ser
            245             250             255
Pro Ala Arg Ala Trp Asp His Val Pro Gly Ala Phe Leu Val Glu Glu
            260             265             270
Ala Gly Gly Arg Val Thr Asp Ala Leu Gly Ala Pro Leu Glu Tyr Arg
    275             280             285
Lys Glu Ser Leu Val Leu Asn Asn His Ala Val Ile Leu Ala Ser Gly
    290             295             300
Asp Gln Glu Thr His Glu Thr Thr Leu Ala Ala Leu Gln Asn Gln Leu
305             310             315             320
Asn Val Val Pro Thr Asp Lys Leu Ile Ala Leu
            325             330
```

1128

<210> 923
<211> 256
<212> PRT
<213> Chlamydia pneumoniae

<400> 923

```
Gly Glu Leu Met Leu Ile Lys Leu Trp Arg Ala Thr Tyr Glu Gly Met
1               5                   10                  15
Tyr Thr Phe Leu Val Gly Ala Leu Leu Lys Leu Arg Tyr Arg Met Gln
            20                  25                  30
Val Glu Gly Trp Asp Thr Leu Asn Ile Asn Pro Lys Gln Gly Cys Leu
        35                  40                  45
Phe Leu Ala Asn His Val Ala Glu Val Asp Pro Ile Ile Leu Glu Tyr
    50                  55                  60
Leu Phe Trp Ser Arg Phe His Val Arg Pro Met Ala Val Glu Tyr Leu
65                  70                  75                  80
Phe His Ser Arg Val Val Gln Trp Phe Leu Asn Ser Val Arg Ser Ile
                85                  90                  95
Pro Ile Pro Gln Leu Val Pro Gly Lys Glu Ser Lys Arg Ser Leu Glu
            100                 105                 110
Arg Met Asn Val Cys Tyr Glu Glu Ala Ser Arg Ala Leu Asn Arg Gly
        115                 120                 125
Glu Ser Leu Leu Leu Tyr Pro Ser Gly Arg Leu Ser Arg Thr Gly Lys
    130                 135                 140
Glu Glu Ile Val Asn Gln Tyr Ser Ala Tyr Val Leu Leu His Arg Val
145                 150                 155                 160
Met Glu Cys Asn Val Val Leu Val Arg Val Ser Gly Leu Trp Gly Ser
                165                 170                 175
Ala Phe Ser Arg Tyr Lys Gln Asn Ser Thr Pro Lys Leu Gly Pro Ala
            180                 185                 190
Phe Lys Glu Ala Phe Arg Ala Leu Leu Arg Arg Gly Ile Phe Phe Met
        195                 200                 205
Pro Lys Arg Phe Val Lys Ile Thr Leu Cys Gln Val Asp His Leu Phe
    210                 215                 220
Leu Lys Gln Phe Pro Thr Lys Gln Asp Leu Asn Thr Phe Leu Ala Ser
225                 230                 235                 240
Trp Phe Asn Gln Gly Asp Asp Asn Leu Pro Ile Glu Val Pro Tyr Ala
                245                 250                 255
```

<210> 924
<211> 554
<212> PRT
<213> Chlamydia pneumoniae

<400> 924

```
Gln Phe Ala His Arg Ser Ser Leu Arg Ile Thr Arg Lys Leu Arg Arg
1               5                   10                  15
Met His Asp Gln Arg Asn Arg Gly His Asn Asn His Asn Leu Arg Leu
            20                  25                  30
Arg Pro Gly Ser Thr Leu Leu Glu Ala Phe Leu Ile Leu Cys Ser Glu
        35                  40                  45
His Glu Glu Gly Ile Ala Cys Phe Asp Glu His Leu Gly Ser Leu Ser
    50                  55                  60
Tyr Arg Glu Leu Arg Asn Ala Ile Ile Ala Val Ala Ile Lys Val Ser
65                  70                  75                  80
Lys Phe Ser Glu Asp Arg Val Gly Val Met Met Pro Ala Ser Ile Gly
                85                  90                  95
Ala Phe Ile Ala Tyr Phe Gly Ile Leu Leu Ala Gly Lys Thr Pro Val
            100                 105                 110
Met Met Asn Trp Ser Gln Gly Leu Arg Glu Leu Arg Ala Cys Thr Lys
        115                 120                 125
```

```
Thr Val Glu Val Arg Arg Val Leu Thr Ser Gln Gln Phe Ile Lys His
    130                 135                 140
Leu Thr Glu Val Gln Gly Phe Val Glu Tyr Pro Phe Asp Leu Met Tyr
145                 150                 155                 160
Met Glu Asp Val Arg Lys Arg Leu Ser Trp Trp Glu Lys Cys Arg Ile
                165                 170                 175
Gly Leu Tyr Ser Lys Cys Ser Val Pro Trp Leu Leu Arg Ile Phe Gly
            180                 185                 190
Val Ser Gly Val Glu Ser Asp Asp Thr Ala Val Ile Leu Phe Thr Ser
            195                 200                 205
Gly Thr Glu Lys Leu Pro Lys Ala Val Pro Leu Thr His Lys Asn Leu
    210                 215                 220
Met Glu Asn Gln Glu Ala Cys Leu Lys Phe Phe Asp Pro Asn Thr Gln
225                 230                 235                 240
Asp Val Met Leu Ala Phe Leu Pro Pro Phe His Ala Tyr Gly Phe Asn
            245                 250                 255
Ser Cys Gly Leu Phe Pro Leu Leu Met Gly Val His Val Val Phe Ala
            260                 265                 270
Ser Asn Pro Leu Asn Pro Lys Lys Leu Val Glu Phe Ile Asp Asp Lys
            275                 280                 285
Lys Val Thr Phe Phe Gly Ser Thr Pro Val Phe Phe Asp Tyr Ile Leu
    290                 295                 300
Lys Thr Ala Lys Lys Gln Asn Ser Cys Leu Glu Ser Leu Arg Leu Val
305                 310                 315                 320
Val Ile Gly Gly Asp Ala Leu Lys Asp Thr Leu Tyr Glu Glu Thr Lys
            325                 330                 335
Lys Leu Gln Pro Gln Ile Ala Leu Tyr Gln Gly Tyr Gly Ala Thr Glu
            340                 345                 350
Cys Ser Pro Val Ile Ser Ile Thr Thr Lys Glu Ser Pro Arg Lys Ser
            355                 360                 365
Glu Cys Val Gly Met Pro Ile Glu Gly Met Asp Val Leu Ile Ile Ser
    370                 375                 380
Lys Glu Thr His Ile Pro Val Ser Ser Gly Glu Gln Gly Leu Ile Val
385                 390                 395                 400
Val Arg Gly Asn Ser Val Phe Ser Gly Tyr Leu Gly Asn His Glu His
            405                 410                 415
Gln Ser Phe Val Ser Leu Gly Gly Asp Gln Trp Tyr Leu Thr Gly Asp
            420                 425                 430
Leu Gly His Ile Gly Pro Ser Gly Asp Leu Phe Leu Glu Gly Arg Leu
    435                 440                 445
Ser Arg Phe Val Lys Ile Gly Gly Glu Met Val Ser Leu Glu Ala Leu
    450                 455                 460
Glu Ser Ile Leu His Glu His Phe Thr Glu Asn Gln Asn Glu Asp Ala
465                 470                 475                 480
Gly Ser Leu Val Val Cys Gly Ile Pro Gly Asp Lys Val Arg Leu Cys
            485                 490                 495
Leu Phe Thr Thr Leu Ala Thr Thr Ile His Glu Val Asn Asp Ile Leu
            500                 505                 510
Lys Ser Ala Glu Thr Ser Ser Ile Val Lys Ile Ser Tyr Val His Gln
    515                 520                 525
Val Glu Ser Ile Pro Ile Leu Gly Ile Gly Lys Pro Asp Tyr Val Ser
    530                 535                 540
Leu Asn Ala Leu Ala Val Ser Leu Phe Gly
545                 550
```

<400> 925

```
Val Cys Lys Glu Ser Phe Leu Thr Thr Ser Asp Val Ile Asp Phe Val
1               5                   10                  15
Thr Asn Asp Phe Leu Gly Phe Ala Arg Ser Pro Thr Ile Tyr Cys Glu
            20                  25                  30
Val Ser Lys Arg Phe Gln Ile His Cys Gln Gln Phe Pro His Glu Lys
            35                  40                  45
Leu Gly Ile Arg Gly Ser Arg Leu Met Val Gly Pro Ser Ser Val Ile
            50                  55                  60
Asp Asp Leu Glu Ser Lys Ile Ala Ser Tyr His Gly Ala Pro Asn Ala
65                  70                  75                  80
Phe Ile Val Asn Ser Gly Tyr Met Ala Asn Leu Gly Leu Cys His His
                85                  90                  95
Val Ser Arg Ser Thr Asp Val Leu Leu Trp Asp Glu Glu Val His Met
            100                 105                 110
Ser Val Val His Ser Leu Ser Ala Ile Ser Gly Gln His His Thr Phe
            115                 120                 125
His His Asn Asn Leu Glu His Leu Glu Ser Leu Leu Gln Cys Tyr Arg
            130                 135                 140
Ile Ser Ser Lys Gly Arg Ile Phe Ile Phe Val Ser Ser Val Tyr Ser
145                 150                 155                 160
Phe Arg Gly Thr Leu Ala Pro Leu Glu Gln Ile Ile Ala Leu Ser Lys
            165                 170                 175
Lys Tyr His Ala His Leu Ile Val Asp Glu Ala His Ala Met Gly Ile
            180                 185                 190
Phe Gly Asp Asp Gly Lys Gly Leu Cys His Ala Leu Gly Tyr Glu Asn
            195                 200                 205
Phe Tyr Ala Val Leu Val Thr Tyr Gly Lys Ala Leu Gly Thr Met Gly
            210                 215                 220
Ala Ser Leu Leu Thr Ser Ser Glu Val Lys Tyr Asp Leu Met Gln Asn
225                 230                 235                 240
Ser Pro Pro Leu Arg Tyr Ser Thr Ser Leu Ser Pro His Thr Leu Ile
            245                 250                 255
Ser Ile Gly Thr Ala Tyr Asp Phe Leu Ala Ser Glu Gly Glu Ile Ala
            260                 265                 270
Arg Lys Gln Val Phe Lys Leu Lys Glu His Phe His Glu Cys Phe Asp
            275                 280                 285
Ser His Ala Pro Gly Cys Val Gln Pro Ile Phe Leu Pro His Thr Cys
290                 295                 300
Leu Glu Glu Ala Ile Ser Val Leu Glu Thr Thr Gly Ile His Val Gly
305                 310                 315                 320
Val Val Ala Phe Ala Lys His Pro Phe Leu Arg Val Asn Leu His Ala
                325                 330                 335
Tyr Asn Thr Val Asp Glu Val Asn Leu Leu Ala Gln Val Met Lys Pro
            340                 345                 350
Tyr Leu Glu Lys Ser Ser His Arg Val His Ile Asn His Glu Phe His
            355                 360                 365
Leu Trp Arg Glu Leu Cys Gln His
    370                 375
```

        <210> 926
        <211> 758
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 926

```
Lys Arg Phe Thr Ala Lys Thr Lys Ser Met Gly Tyr Ile Glu Ser Ser
1               5                   10                  15
Thr Phe Arg Leu Tyr Ala Glu Val Ile Val Gly Ser Asn Ile Asn Lys
            20                  25                  30
```

```
Val Leu Asp Tyr Gly Val Pro Glu Asn Leu Glu His Ile Thr Lys Gly
        35                  40                  45
Thr Ala Val Thr Ile Ser Leu Arg Gly Gly Lys Lys Val Gly Val Ile
        50                  55                  60
Tyr Gln Ile Lys Thr Thr Thr Gln Cys Lys Lys Ile Leu Pro Ile Leu
65              70                  75                      80
Gly Leu Ser Asp Ser Glu Ile Val Leu Pro Gln Asp Leu Leu Asp Leu
                85                  90                  95
Leu Phe Trp Ile Ser Gln Tyr Tyr Phe Ala Pro Leu Gly Lys Thr Leu
                100                 105                 110
Lys Leu Phe Leu Pro Ala Ile Ser Ser Asn Val Ile Gln Pro Lys Gln
        115                 120                 125
His Tyr Arg Val Val Leu Lys Gln Ser Lys Ala Lys Thr Lys Glu Ile
        130                 135                 140
Leu Ala Lys Leu Glu Val Leu His Pro Ser Gln Gly Ala Val Leu Lys
145                 150                 155                 160
Ile Leu Leu Gln His Ala Ser Pro Pro Gly Leu Ser Ser Leu Met Glu
                165                 170                 175
Thr Ala Lys Val Ser Gln Ser Pro Ile His Ser Leu Glu Lys Leu Gly
                180                 185                 190
Ile Leu Asp Ile Val Asp Ala Ala Gln Leu Glu Leu Gln Glu Asp Leu
        195                 200                 205
Leu Thr Phe Phe Pro Pro Ala Pro Lys Asp Leu His Pro Glu Gln Gln
        210                 215                 220
Ser Ala Ile Asp Lys Ile Phe Ser Ser Leu Lys Thr Ser Gln Phe His
225                 230                 235                 240
Thr His Leu Leu Phe Gly Ile Thr Gly Ser Gly Lys Thr Glu Ile Tyr
                245                 250                 255
Leu Arg Ala Thr Ser Glu Ala Leu Lys Gln Gly Lys Ser Thr Ile Leu
        260                 265                 270
Leu Val Pro Glu Ile Ala Leu Thr Val Gln Thr Val Ser Leu Phe Lys
        275                 280                 285
Ala Arg Phe Gly Lys Asp Val Gly Val Leu His His Lys Leu Ser Asp
        290                 295                 300
Ser Asp Lys Ser Arg Thr Trp Arg Gln Ala Ser Glu Gly Ser Leu Arg
305                 310                 315                 320
Ile Leu Ile Gly Pro Arg Ser Ala Leu Phe Cys Pro Met Lys Asn Leu
                325                 330                 335
Gly Leu Ile Ile Val Asp Glu Glu His Asp Pro Ala Tyr Lys Gln Thr
                340                 345                 350
Glu Ser Pro Pro Cys Tyr His Ala Arg Asp Val Ala Val Met Arg Gly
        355                 360                 365
Lys Leu Ala His Ala Thr Val Leu Gly Ser Ala Thr Pro Ser Leu
        370                 375                 380
Glu Ser Tyr Thr Asn Ala Leu Ser Gly Lys Tyr Val Leu Ser Arg Leu
385                 390                 395                 400
Ser Ser Arg Ala Ala Ala Ala His Pro Ala Lys Ile Ser Leu Ile Asn
                405                 410                 415
Met Asn Leu Glu Arg Glu Lys Ser Lys Thr Lys Ile Leu Phe Ser Gln
                420                 425                 430
Pro Val Leu Lys Lys Ile Ala Glu Arg Leu Glu Val Gly Glu Gln Val
        435                 440                 445
Leu Ile Phe Phe Asn Arg Arg Gly Tyr His Thr Asn Val Ser Cys Thr
        450                 455                 460
Val Cys Lys His Thr Leu Lys Cys Pro His Cys Asp Met Val Leu Thr
465                 470                 475                 480
Phe His Lys Tyr Ala Asn Val Leu Leu Cys His Leu Cys Asn Ser Ser
                485                 490                 495
Pro Lys Asp Leu Pro Gln Ser Cys Pro Lys Cys Leu Gly Thr Met Thr
        500                 505                 510
```

```
Leu Gln Tyr Arg Gly Ser Gly Thr Glu Lys Ile Glu Lys Ile Leu Gln
    515                 520                 525
Gln Ile Phe Pro Gln Ile Arg Thr Ile Arg Ile Asp Ser Asp Thr Thr
    530                 535                 540
Lys Phe Lys Gly Ser His Glu Thr Leu Leu Arg Gln Phe Ala Thr Gly
545                 550                 555                 560
Lys Ala Asp Val Leu Ile Gly Thr Gln Met Ile Ala Lys Gly Met Asn
                565                 570                 575
Phe Ser Ala Val Thr Leu Ala Val Ile Leu Asn Gly Asp Ser Gly Leu
                580                 585                 590
Tyr Ile Pro Asp Phe Arg Ala Ser Glu Gln Val Phe Gln Leu Ile Thr
                595                 600                 605
Gln Val Ala Gly Arg Ser Gly Arg Ser His Leu Pro Gly Glu Ile Leu
    610                 615                 620
Ile Gln Ser Phe Leu Pro Asp His Pro Thr Ile His Ser Ala Met Arg
625                 630                 635                 640
Gln Asp Tyr Ser Ala Phe Tyr Ser Gln Glu Ile Thr Gly Arg Glu Leu
                645                 650                 655
Cys Glu Tyr Pro Pro Phe Ile Arg Leu Ile Arg Cys Ile Phe Met Gly
                660                 665                 670
Lys Cys Pro Lys Gln Thr Trp Glu Glu Ala His Arg Val His Asn Ile
    675                 680                 685
Leu Lys Glu Gln Leu Glu Ser Thr Asn Pro Leu Met Pro Val Thr Pro
    690                 695                 700
Cys Gly His Phe Lys Ile Lys Asp Thr Phe Arg Tyr Gln Phe Leu Ile
705                 710                 715                 720
Lys Ser Ala Tyr Val Ile Pro Val Asn Lys Lys Leu His His Ala Leu
                725                 730                 735
Met Leu Ala Lys Leu Ser Pro Lys Val Lys Phe Met Ile Asp Val Asp
                740                 745                 750
Pro Met Thr Thr Phe Phe
                755
```

<210> 927
<211> 230
<212> PRT
<213> Chlamydia pneumoniae

<400> 927
```
Lys His Trp Leu Phe Met Glu Asn Ser Gln Asn Phe His Asp Thr Leu
1                 5                   10                  15
Cys Gln Leu Leu Asp Arg Tyr Ser Glu Glu Leu Tyr Pro Thr Leu Ala
                20                  25                  30
Ser Leu Leu Asn Val Thr Leu Pro Asn Thr Ala Ile Ser Ala Ser Val
                35                  40                  45
Ser Ser Ile Pro Glu Lys Ala Val Glu Val Pro Asn Ala Glu Pro Gln
    50                  55                  60
Pro Ile Thr Pro Pro Pro Thr Asn Leu Ser Gln Glu Lys Thr Lys
65                  70                  75                  80
Pro Ser Asp Trp Lys Cys Val Pro Leu His Pro Asp Leu Ser Gln Asn
                85                  90                  95
Ala Ile Leu Lys Glu Lys Tyr Pro Ala Leu Lys Asp Cys Ser Leu Pro
                100                 105                 110
Ala Pro Lys Ile Pro Cys Ser Ile Phe Val Tyr Glu Glu Asn Asn Glu
    115                 120                 125
Glu Val Leu Phe Phe Asn Arg Leu Ala Lys Ile Leu Thr Gln Gln Leu
    130                 135                 140
Phe Pro Thr Lys Leu Thr Leu Ile His Ala Lys Thr Asn Ile Phe Val
145                 150                 155                 160
Asn Asn Pro Asn Phe Phe Leu Ala Leu Ala Pro Leu Asn Val Ile Arg
                165                 170                 175
```

1133

```
Tyr Lys Ile Pro Thr Thr Asp Tyr His Gln Ser Leu Thr Gln Asn Gly
            180                 185                 190
Cys Ile Phe Leu Pro Leu Tyr Ser Ser Leu Glu Tyr Glu Lys Asp Ser
            195                 200                 205
Gln Leu Lys Arg Asn Leu Trp Ala Ile Leu Asn Arg Leu Pro Phe Ala
    210                 215                 220
Tyr Thr Pro Lys Ser Ser
225                 230


        <210> 928
        <211> 183
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 928
Cys His His Thr Gln Gln Thr Tyr Ser Thr Arg Phe Phe Lys Asp Ser
1               5                   10                  15
Asp Met Lys Phe Trp Leu Gln Gly Cys Ala Phe Val Gly Cys Leu Leu
            20                  25                  30
Leu Thr Leu Pro Cys Cys Ala Ala Arg Arg Arg Ala Ser Gly Glu Asn
        35                  40                  45
Leu Gln Gln Thr Arg Pro Ile Ala Ala Ala Asn Leu Gln Trp Glu Ser
    50                  55                  60
Tyr Ala Glu Ala Leu Glu His Ser Lys Gln Asp His Lys Pro Ile Cys
65                  70                  75                  80
Leu Phe Phe Thr Gly Ser Asp Trp Cys Met Trp Cys Ile Lys Met Gln
            85                  90                  95
Asp Gln Ile Leu Gln Ser Ser Glu Phe Lys His Phe Ala Gly Val His
            100                 105                 110
Leu His Met Val Glu Val Asp Phe Pro Gln Lys Asn His Gln Pro Glu
        115                 120                 125
Glu Gln Arg Gln Lys Asn Gln Glu Leu Lys Ala Gln Tyr Lys Val Thr
    130                 135                 140
Gly Phe Pro Glu Leu Val Phe Ile Asp Ala Glu Gly Lys Gln Leu Ala
145                 150                 155                 160
Arg Met Gly Phe Glu Pro Gly Gly Gly Ala Ala Tyr Val Ser Lys Val
            165                 170                 175
Lys Ser Ala Leu Lys Leu Arg
            180


        <210> 929
        <211> 383
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 929
Asp Ser Cys Met Ile Pro Ser Pro Thr Pro Ile Asn Phe Arg Asp Asp
1               5                   10                  15
Thr Ile Leu Glu Thr Asp Pro Lys Pro Ser Leu Ile Met Phe Ser Ser
            20                  25                  30
Lys Lys Thr Glu Ile Ala Ser Glu Arg Arg Lys Ala His Pro Thr Leu
        35                  40                  45
Phe Lys Val Leu Gly Thr Ile Trp Asn Ile Val Lys Phe Ile Ile Ser
    50                  55                  60
Ile Ile Leu Phe Leu Pro Leu Ala Leu Leu Trp Val Leu Lys Lys Thr
65                  70                  75                  80
Cys Gln Phe Phe Ile Leu Pro Ser Ser Ile Ile Ser Gln Ser Met Ser
            85                  90                  95
Lys Thr Ala Val Ala Ile Arg Arg Met Thr Phe Leu Ser His Ile Lys
            100                 105                 110
```

1134

```
Gln Leu Leu Ser Leu Lys Glu Ile Ser Ala Ala Asp Arg Val Val Ile
        115                 120                 125
Gln Tyr Asp Asp Leu Val Val Asp Ser Leu Ala Ile Lys Ile Pro His
        130                 135                 140
Ala Leu Pro His Arg Trp Ile Leu Tyr Ser Gln Gly Asn Ser Gly Leu
145                 150                 155                 160
Met Glu Asn Leu Phe Asp Arg Gly Asp Ser Ser Leu His Gln Leu Ala
                165                 170                 175
Lys Ala Thr Gly Ser Asn Leu Leu Val Phe Asn Tyr Pro Gly Ile Met
                180                 185                 190
Ser Ser Lys Gly Glu Ala Lys Arg Glu Asn Leu Val Lys Ser Tyr Gln
                195                 200                 205
Ala Cys Val Arg Tyr Leu Arg Asp Glu Glu Thr Gly Pro Lys Ala Asn
        210                 215                 220
Gln Ile Ile Ala Phe Gly Tyr Ser Leu Gly Thr Ser Val Gln Ala Ala
225                 230                 235                 240
Ala Leu Asp Arg Glu Val Thr Asp Gly Ser Asp Gly Thr Ser Trp Ile
                245                 250                 255
Val Val Lys Asp Arg Gly Pro Arg Ser Leu Ala Asp Val Ala Asn Gln
                260                 265                 270
Ile Cys Lys Pro Ile Ala Ser Ala Ile Ile Lys Leu Val Gly Trp Asn
        275                 280                 285
Ile Asp Ser Val Lys Pro Ser Glu Arg Leu Arg Cys Pro Glu Ile Phe
        290                 295                 300
Ile Tyr Asn Ser Asn His Asp Gln Glu Leu Ile Ser Asp Gly Leu Phe
305                 310                 315                 320
Glu Arg Glu Asn Cys Val Ala Thr Pro Phe Leu Glu Leu Pro Glu Val
                325                 330                 335
Lys Thr Ser Gly Thr Lys Ile Pro Ile Pro Glu Arg Asp Leu Leu His
                340                 345                 350
Leu Asn Pro Leu Ser Pro Asn Val Val Asp Arg Leu Ala Ala Val Ile
        355                 360                 365
Ser Asn Tyr Leu Asp Ser Glu Asn Arg Lys Ser Gln Gln Pro Asp
        370                 375                 380


        <210> 930
        <211> 384
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 930
Arg Arg Lys Asp Phe Ala Phe Thr Leu Leu Asn Leu Ser Asn Arg Ser
1                   5                   10                  15
Asp Ile Leu Ser Gly Ile Phe Ser Asn Pro His Pro Val Ser Tyr Phe
        20                  25                  30
Ser Ser Thr His Ala Lys Gln Leu Ser Asp Phe Ser Lys Lys His Pro
        35                  40                  45
Ile Leu Thr Lys Ile Val Thr Ile Ile Val Lys Ile Phe Lys Leu Leu
        50                  55                  60
Ile Gly Leu Ile Ile Pro Pro Leu Gly Ile Tyr Trp Leu Cys Gln Leu
65                  70                  75                  80
Val Cys Ser Leu Ala Leu Phe Pro Arg Ser Ser Met Leu Tyr Ser Val
                85                  90                  95
Leu Lys Thr Cys Phe Lys Lys Tyr Arg Leu Glu Gln Glu Ile Gln Asp
                100                 105                 110
Tyr Phe Val Lys Asn Leu Asp Pro Ser Phe Lys Asp Pro Ala Val Ser
        115                 120                 125
Glu Ser Lys Arg Ile Thr Ile Gln Gln Asp His Leu Thr Ile Asp Thr
        130                 135                 140
Leu Ala Ile His Phe Ser Thr Ala Arg Pro Lys Arg Trp Leu Leu Ile
145                 150                 155                 160
```

1135

```
Ser Leu Gly Ser Gly Asp Phe Leu Glu Asp Met Ile Gly Leu Lys Asp
            165              170              175
Ser Leu Phe Leu Ser Trp Lys Glu Leu Ala Lys Leu Leu Gly Ala Asn
            180              185              190
Ile Leu Ile Tyr Asn Tyr Pro Gly Val Lys Ser Ser Thr Gly Lys Leu
            195              200              205
Asn Leu Glu Asn Leu Ala Thr Ala His Asn Leu Cys Ala Lys Tyr Leu
    210              215              220
Gln Asp Lys Ile Gln Gly Pro Gly Ala Asn Glu Ile Ile Thr Tyr Gly
225              230              235              240
Tyr Ser Leu Gly Gly Val Val Gln Ser Ala Ala Leu Gln Lys Asn Pro
            245              250              255
Phe Thr Asn Ser Glu Thr Ser Trp Val Ala Val Lys Asp Arg Ala Pro
            260              265              270
His Ser Leu Pro Ala Ala Ala Asn Ser Phe Phe Gly Pro Ile Gly Lys
            275              280              285
Leu Ile Ala Val Leu Ala Arg Trp Lys Met Asp Ala Glu Lys Asn Ser
290              295              300
Arg Glu Leu Pro Cys Pro Glu Ile Leu Val Tyr Ser Ala Asp Arg Phe
305              310              315              320
Arg Pro Ser Glu Val Gly Asp Asp Thr Ala Leu Leu Pro Glu Phe Thr
            325              330              335
Leu Ala His Ala Ile Lys Arg Thr Pro Phe Ala Arg Ser Lys Lys Phe
            340              345              350
Ile Gly Glu Val Asn Leu Leu His Ser Ser Pro Leu Lys His Pro Thr
            355              360              365
Ile Gln Lys Leu Ala Glu Ala Ile Leu Glu Ser Leu Ser Arg Lys Asn
    370              375              380


        <210> 931
        <211> 372
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 931
Glu Lys Phe Met Ala Pro Ile His Gly Ser Asn Ala Phe Val Glu Asp
 1               5               10              15
Ile Leu His Ser His Pro Ser Pro Gln Ala Thr Tyr Phe Ser Ser Thr
            20              25              30
Arg Ala Gln Lys Leu His Glu Phe Lys Asp Arg His Pro Val Leu Thr
        35              40              45
Arg Ile Ala Ser Val Ile Ile Lys Ile Phe Lys Val Leu Ile Gly Leu
    50              55              60
Ile Ile Leu Pro Leu Gly Ile Tyr Trp Leu Cys Gln Thr Leu Cys Thr
65              70              75              80
Asn Ser Ile Leu Pro Ser Lys Asn Leu Leu Lys Ile Phe Lys Lys Gln
            85              90              95
Pro Asn Thr Lys Thr Leu Lys Thr Asn Tyr Leu His Ala Leu Gln Asp
            100             105             110
Tyr Ser Ser Lys Asn Arg Val Ala Ser Met Arg Arg Val Pro Ile Leu
            115             120             125
Gln Asp Asn Val Leu Ile Asp Thr Leu Glu Ile Cys Leu Ser Gln Ala
            130             135             140
Pro Thr Asn Arg Trp Met Leu Ile Ser Leu Gly Ser Asp Cys Ser Leu
145             150             155             160
Glu Glu Ile Ala Cys Lys Glu Ile Phe Asp Ser Trp Gln Arg Phe Ala
            165             170             175
Lys Leu Ile Gly Ala Asn Ile Leu Val Tyr Asn Tyr Pro Gly Val Met
            180             185             190
Ser Ser Thr Gly Ser Ser Ser Leu Lys Asp Leu Ala Ser Ala His Asn
            195             200             205
```

1136

```
Ile Cys Thr Arg Tyr Leu Lys Asp Lys Glu Gln Gly Pro Gly Ala Lys
    210                 215             220
Glu Ile Ile Thr Tyr Gly Tyr Ser Leu Gly Gly Leu Ile Gln Ala Glu
225                 230             235                 240
Ala Leu Arg Asp Gln Lys Ile Val Ala Asn Asp Asp Thr Thr Trp Ile
                245             250             255
Ala Val Lys Asp Arg Cys Pro Leu Phe Ile Ser Pro Glu Gly Phe His
                260             265             270
Ser Cys Arg Arg Ile Gly Lys Leu Val Ala Arg Leu Phe Gly Trp Gly
                275             280             285
Thr Lys Ala Val Glu Arg Ser Gln Asp Leu Pro Cys Leu Glu Ile Phe
    290             295             300
Leu Tyr Pro Thr Asp Ser Leu Arg Arg Ser Thr Val Arg Gln Asn Lys
305             310             315                 320
Leu Leu Ala Pro Glu Leu Thr Leu Ala His Ala Ile Lys Asn Ser Pro
                325             330                 335
Tyr Val Gln Asn Lys Glu Phe Ile Glu Val Arg Leu Ser Ser Asp Ile
                340             345             350
Asp Pro Ile Asp Ser Lys Thr Arg Val Ala Leu Ala Thr Pro Ile Leu
                355             360             365
Lys Lys Leu Ser
    370
```

```
Asn Lys Met Ser Glu Leu Ala Pro Cys Ser Thr Gly Leu Gln Met Val
1               5               10              15
Pro His Thr Gln Val His His Ala Leu Asp Thr Arg Arg Val Ile Leu
                20              25              30
Thr Ile Ala Ala Cys Leu Ser Leu Ile Ala Gly Ile Val Leu Val Gly
        35              40              45
Leu Gly Ala Ala Ala Ile Leu Pro Ser Leu Phe Gly Val Ile Gly Gly
    50              55                  60
Met Ile Leu Ile Leu Phe Ser Ser Ile Ala Leu Ile Tyr Leu Tyr Lys
65              70                  75                  80
Lys Thr Arg Glu Val Asp Gln Ile Ala Leu Glu Pro Leu Pro Glu Met
                85              90                  95
Ile Ser Lys Asp Gln Ser Ile Ile Asp Phe Val Lys Thr Arg Asp Tyr
            100             105             110
Ala Ser Leu Glu Lys Lys Ala Thr Phe Ala Tyr Thr His Thr His Tyr
            115             120             125
Tyr Asp Gly Ser Met Val Phe Tyr Arg Glu Ile Pro Arg Phe Met Leu
            130             135             140
Gly Ser Tyr Leu Ala Leu Arg Lys Asp Met Asp Arg Gln Ala Leu Phe
145             150             155                 160
```

```
Ile Asp Phe Arg Val Leu Gly Trp Lys Ser Asp Ile Tyr Thr Asn Ile
1               5               10              15
Leu Glu Glu Arg Met Thr Ala Arg Ala Glu Tyr Leu Asp His Glu Asp
                20              25              30
```

```
Phe Leu Tyr Arg Ser His Lys Leu Gln Glu Leu Ser Glu Leu Gly Val
        35                  40                  45
Val Leu Tyr Pro Tyr Glu Phe Pro Gly Val Phe Ser Cys Glu Asp Ile
        50              55                  60
Lys Lys Thr Phe Ala Ser Gln Glu Leu Gly Asn Ser Glu Ala Ala Met
65                      70                  75                  80
Ser Arg Ser Thr Pro Arg Val Arg Phe Ala Gly Arg Leu Val Leu Phe
                85                  90                  95
Arg Ala Met Gly Lys Asn Ala Phe Gly Gln Ile Leu Asp His Asn Gln
            100                 105                 110
Thr Ile Gln Val Met Phe Asn Arg Glu Phe Thr Ser Val His Gly Leu
            115                 120                 125
Ser Glu Asp Ala Glu Ile Thr Pro Ile Lys Phe Ile Glu Lys Lys Leu
    130                 135                 140
Asp Leu Gly Asp Ile Leu Gly Ile Asp Gly Tyr Leu Phe Phe Thr His
145                 150                 155                 160
Ser Gly Glu Leu Thr Val Leu Val Glu Thr Val Thr Leu Leu Cys Lys
                165                 170                 175
Ser Leu Leu Ser Leu Pro Asp Lys His Ala Gly Leu Ser Asp Lys Glu
            180                 185                 190
Val Arg Tyr Arg Lys Arg Trp Leu Asp Leu Ile Ser Ser Arg Glu Val
        195                 200                 205
Ser Asp Thr Phe Val Lys Arg Ser Tyr Ile Ile Lys Leu Ile Arg Asn
    210                 215                 220
Tyr Met Asp Ala His Gly Phe Leu Glu Val Glu Thr Pro Ile Leu Gln
225                 230                 235                 240
Asn Ile Tyr Gly Gly Ala Glu Ala Lys Pro Phe Thr Thr Thr Met Glu
            245                 250                 255
Ala Leu His Ser Glu Met Phe Leu Arg Ile Ser Leu Glu Ile Ala Leu
            260                 265                 270
Lys Lys Ile Leu Val Gly Gly Ala Pro Arg Ile Tyr Glu Leu Gly Lys
        275                 280                 285
Val Phe Arg Asn Glu Gly Ile Asp Arg Thr His Asn Pro Glu Phe Thr
        290                 295                 300
Met Ile Glu Ala Tyr Ala Ala Tyr Met Asp Tyr Lys Glu Val Met Val
305                 310                 315                 320
Phe Val Glu Asn Leu Val Glu His Leu Val Arg Ala Val Asn His Asp
                325                 330                 335
Asn Thr Ser Leu Val Tyr Ser Tyr Trp Lys His Gly Pro Gln Glu Val
            340                 345                 350
Asp Phe Lys Ala Pro Trp Ile Arg Met Thr Met Lys Glu Ser Ile Ala
    355                 360                 365
Thr Tyr Ala Gly Ile Asp Val Asp Val His Ser Asp Gln Lys Leu Lys
    370                 375                 380
Glu Ile Leu Lys Lys Lys Thr Thr Phe Pro Glu Thr Ala Phe Ala Thr
385                 390                 395                 400
Ala Ser Arg Gly Met Leu Ile Ala Ala Leu Phe Asp Glu Leu Val Ser
            405                 410                     415
Asp Asn Leu Ile Ala Pro His His Ile Thr Asp His Pro Val Glu Thr
            420                 425                 430
Thr Pro Leu Cys Lys Thr Leu Arg Ser Gly Asp Thr Ala Phe Val Glu
            435                 440                 445
Arg Phe Glu Ser Phe Cys Leu Gly Lys Glu Leu Cys Asn Ala Tyr Ser
    450                 455                 460
Glu Leu Asn Asp Pro Ile Arg Gln Arg Glu Leu Leu Glu Gln Gln His
465                 470                 475                 480
Thr Lys Lys Glu Leu Leu Pro Asp Ser Glu Cys His Pro Ile Asp Glu
                485                 490                 495
Glu Phe Leu Glu Ala Leu Cys Gln Gly Met Pro Pro Ala Gly Gly Phe
            500                 505                 510
```

1138

Gly Ile Gly Val Asp Arg Leu Val Met Ile Leu Thr Asn Ala Ala Ser
515   520   525
Ile Arg Asp Val Leu Tyr Phe Pro Val Met Arg Arg Phe Asp Ala Glu
530   535   540
Lys Thr Asn
545

<210> 934
<211> 480
<212> PRT
<213> Chlamydia pneumoniae

<400> 934
Val Lys Ser Asp Thr Val Met Ala Phe Ser His Ile Glu Gly Leu Tyr
1   5   10   15
Phe Tyr Asn Thr Ala Ser Gln Lys Lys Glu Leu Phe Phe Pro Asn His
            20   25   30
Thr Pro Val Arg Leu Tyr Thr Cys Gly Pro Thr Val Tyr Asp Tyr Ala
        35   40   45
His Ile Gly Asn Phe Arg Thr Tyr Val Phe Glu Asp Ile Leu Lys Arg
    50   55   60
Thr Leu Val Phe Phe Gly Tyr Ser Val Thr His Val Met Asn Ile Thr
65   70   75   80
Asp Val Glu Asp Lys Thr Ile Ala Gly Ala Ser Lys Lys Asn Ile Pro
                85   90   95
Leu Gln Glu Tyr Thr Gln Pro Tyr Thr Glu Ala Phe Phe Glu Asp Leu
            100   105   110
Asp Thr Leu Asn Ile Ala Arg Ala Asp Phe Tyr Pro His Ala Thr His
        115   120   125
Tyr Ile Pro Gln Met Ile Gln Ala Ile Thr Lys Leu Leu Glu Gln Gly
    130   135   140
Ile Ala Tyr Ile Gly Gln Asp Ala Ser Val Tyr Phe Ser Leu Asn Arg
145   150   155   160
Phe Pro Asn Tyr Gly Lys Leu Ser His Leu Asp Leu Ser Ser Leu Arg
                165   170   175
Cys Cys Ser Arg Ile Ser Ala Asp Glu Tyr Asp Lys Glu Asn Pro Ser
            180   185   190
Asp Phe Val Leu Trp Lys Ala Tyr Asn Pro Glu Arg Asp Gly Val Ile
        195   200   205
Tyr Trp Glu Ser Pro Phe Gly Lys Gly Arg Pro Gly Trp His Leu Glu
    210   215   220
Cys Ser Ile Met Ala Met Glu Leu Leu Gly Asp Ser Leu Asp Ile His
225   230   235   240
Ala Gly Gly Val Asp Asn Ile Phe Pro His His Glu Asn Glu Ile Ala
                245   250   255
Gln Ser Glu Ala Leu Ser Gly Lys Pro Phe Ala Arg Tyr Trp Leu His
            260   265   270
Ser Glu His Leu Leu Ile Asp Gly Lys Lys Met Ser Lys Ser Leu Gly
    275   280   285
Asn Phe Leu Thr Leu Arg Asp Leu Leu His Gln Glu Phe Thr Gly Gln
    290   295   300
Glu Val Arg Tyr Met Leu Leu Gln Ser His Tyr Arg Thr Gln Leu Asn
305   310   315   320
Phe Thr Glu Glu Ala Leu Leu Ala Cys Arg His Ala Leu Arg Arg Leu
                325   330   335
Lys Asp Phe Val Ser Arg Leu Glu Gly Val Asp Leu Pro Gly Glu Ser
            340   345   350
Pro Leu Pro Arg Thr Leu Asp Ser Ser Ser Gln Phe Ile Glu Ala Phe
        355   360   365
Ser Arg Ala Leu Ala Asn Asp Leu Asn Val Ser Thr Gly Phe Ala Ser
    370   375   380

1139

```
Leu Phe Asp Phe Val His Glu Ile Asn Thr Leu Ile Asp Gln Gly His
385             390             395             400
Phe Ser Lys Ala Asp Ser Leu Tyr Ile Leu Asp Thr Leu Lys Lys Val
            405             410             415
Asp Thr Val Leu Gly Val Leu Pro Leu Thr Thr Ser Val Cys Ile Pro
            420             425             430
Glu Thr Val Met Gln Leu Val Ala Glu Arg Glu Glu Ala Arg Lys Thr
            435             440             445
Lys Asn Trp Ala Met Ala Asp Thr Leu Arg Asp Glu Ile Leu Ala Ala
        450             455             460
Gly Phe Leu Val Glu Asp Ser Lys Ser Gly Pro Lys Val Lys Pro Leu
465             470             475             480

        <210> 935
        <211> 349
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 935
Pro Val Ile Leu Leu Gln Asn Ile Lys Arg Cys Ser Leu Lys Gln Leu
  1           5              10              15
Lys Val Leu Ala Thr Leu Leu Leu Ser Leu Ser Leu Pro Thr Leu Glu
            20              25              30
Ala Ala Glu Asn Arg Asp Ser Asp Ser Ile Val Trp His Leu Asp Tyr
        35              40              45
Gln Glu Ala Leu Gln Lys Ser Lys Glu Ala Glu Leu Pro Leu Leu Val
        50              55              60
Ile Phe Ser Gly Ser Asp Trp Asn Gly Pro Cys Met Lys Ile Arg Lys
65              70              75              80
Glu Val Leu Glu Ser Pro Glu Phe Ile Lys Arg Val Gln Gly Lys Phe
            85              90              95
Val Cys Val Glu Val Glu Tyr Leu Lys His Arg Pro Gln Val Glu Asn
            100             105             110
Ile Arg Gln Gln Asn Leu Ala Leu Lys Ser Lys Phe Lys Ile Asn Glu
    115             120             125
Leu Pro Cys Met Ile Leu Leu Ser His Glu Glu Arg Glu Ile Tyr Arg
    130             135             140
Ile Gly Ser Phe Gly Asn Glu Thr Gly Ser Asn Leu Gly Asp Ser Leu
145             150             155             160
Cys His Ile Val Glu Ser Asp Ser Leu Leu Arg Arg Ala Phe Pro Met
            165             170             175
Met Thr Ser Leu Ser Leu Ser Glu Leu Gln Arg Tyr Tyr Arg Leu Ala
        180             185             190
Glu Glu Leu Ser His Lys Glu Phe Leu Lys His Ala Leu Glu Leu Gly
        195             200             205
Val Arg Ser Asp Asp Tyr Phe Phe Leu Ser Glu Lys Phe Arg Leu Leu
    210             215             220
Val Glu Val Gly Lys Met Asp Ser Glu Glu Cys Gln Arg Ile Lys Lys
225             230             235             240
Arg Leu Leu Asn Lys Asp Pro Lys Asn Glu Lys Gln Thr His Phe Thr
            245             250             255
Val Ala Leu Ile Glu Phe Gln Glu Leu Ala Lys Arg Ser Arg Ala Gly
        260             265             270
Val Arg Gln Asp Ala Ser Gln Val Ile Ala Pro Leu Glu Ser Tyr Ile
    275             280             285
Ser Gln Phe Gly Gln Gln Asp Lys Asp Asn Leu Trp Arg Val Glu Met
    290             295             300
Met Ile Ala Gln Phe Tyr Leu Asp Ser Asp Gln Trp His His Ala Leu
305             310             315             320
Gln His Ala Glu Val Ala Phe Glu Ala Ala Pro Asn Glu Val Arg Ser.
            325             330             335
```

1140

```
His Ile Ser Arg Ser Leu Glu Tyr Ile Arg His Gln Ser
        340                 345
```

```
        <210> 936
        <211> 141
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 936
Tyr Phe Val His Pro Leu Thr Leu Pro Lys Gln Ser Arg Val Leu Lys
1               5                   10                  15
Arg Lys Gln Phe Leu Tyr Ile Thr Arg Ser Gly Phe Cys Cys Arg Gly
            20                  25                  30
Ser Gln Ala Thr Phe Tyr Val Val Pro Ser Arg His Pro Gly Thr Cys
        35                  40                  45
Arg Met Gly Ile Thr Val Ser Lys Lys Phe Gly Lys Ala His Glu Arg
    50                  55                  60
Asn Ser Phe Lys Arg Val Val Arg Glu Val Phe Arg His Val Arg His
65                  70                  75                  80
Gln Leu Pro Asn Cys Gln Ile Val Val Phe Pro Lys Gly His Lys Gln
            85                  90                  95
Arg Pro Val Phe Ser Lys Leu Leu Gln Asp Phe Ile Asn Gln Ile Pro
            100                 105                 110
Glu Gly Leu His Arg Leu Gly Lys Thr Lys Ala Thr Thr Gly Gly Glu
        115                 120                 125
Cys Thr Pro Lys Ser Glu Lys Cys Val Thr Ala Pro Arg
    130                 135                 140


        <210> 937
        <211> 48
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 937
Glu Asp Thr Val Lys Arg Thr Tyr Gln Pro Ser Lys Arg Lys Arg Arg
1               5                   10                  15
Asn Ser Val Gly Phe Arg Thr Arg Met Ala Thr Arg Asn Gly Arg Lys
            20                  25                  30
Leu Leu Asn Arg Arg Arg Arg His Gly Arg His Ser Leu Val Asp Leu
        35                  40                  45


        <210> 938
        <211> 47
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 938
Tyr Leu Met Lys Val Ser Ser Ser Val Lys Ala Asp Pro Ser Lys Gly
1               5                   10                  15
Asp Lys Leu Val Arg Arg Lys Gly Arg Leu Tyr Val Ile Asn Lys Lys
            20                  25                  30
Asp Pro Asn Arg Lys Gln Arg Gln Ala Gly Pro Ala Arg Lys Lys
        35                  40                  45


        <210> 939
        <211> 104
        <212> PRT
        <213> Chlamydia pneumoniae
```

<400> 939

Val Lys Arg Met Ala Lys Lys Ser Ser Val Ala Arg Glu Ala Lys Arg
1   5   10   15
Arg Arg Leu Val Glu Ala Asn Phe Lys Lys Arg Ser Asp Leu Arg Lys
            20   25   30
Ile Val Lys Ser Leu Ser Val Ser Glu Glu Glu Lys Glu Asn Ala Arg
            35   40   45
Ile Ser Leu Asn Lys Met Lys Arg Asp Thr Ser Pro Thr Arg Leu His
        50   55   60
Asn Arg Cys Leu Leu Thr Gly Arg Pro Arg Gly Tyr Leu Arg Lys Phe
65   70   75   80
Ala Ile Ser Arg Ile Cys Phe Arg Gln Met Ala Ser Met Gly Glu Ile
            85   90   95
Pro Gly Val Ile Lys Ala Ser Trp
            100

        <210> 940
        <211> 169
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 940

Gln Thr Ile Asn Leu Ser Gly Thr Leu Arg Thr Met Leu Pro Ile Ser
1   5   10   15
Ile Leu Leu Phe Tyr Val Ile Leu Gly Cys Leu Ser Ala Tyr Ile Ala
            20   25   30
Asp Lys Lys Lys Arg Asn Val Ile Gly Trp Phe Phe Ala Gly Ala Phe
            35   40   45
Phe Gly Phe Ile Gly Leu Val Val Leu Leu Leu Leu Pro Ser Arg Arg
    50   55   60
Asn Ala Leu Glu Lys Pro Gln Asn Asp Pro Phe Asp Asn Ser Asp Leu
65   70   75   80
Phe Asp Asp Leu Lys Lys Ser Leu Ala Gly Asn Asp Glu Ile Pro Ser
            85   90   95
Ser Gly Asp Leu Gln Glu Ile Val Ile Asp Thr Glu Lys Trp Phe Tyr
            100   105   110
Leu Asn Lys Asp Arg Glu Asn Val Gly Pro Ile Ser Phe Glu Glu Leu
            115   120   125
Val Val Leu Leu Lys Gly Lys Thr Tyr Pro Glu Glu Ile Trp Val Trp
    130   135   140
Lys Lys Gly Met Lys Asp Trp Gln Arg Val Lys Asp Val Pro Ser Leu
145   150   155   160
Gln Gln Ala Leu Lys Glu Ala Ser Lys
            165

        <210> 941
        <211> 189
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 941

His Ile Asn Arg Trp Thr Ile Arg Leu Ser Leu Thr Leu Ile Ile Ser
1   5   10   15
Thr Val Leu Tyr Phe Phe Ser Glu Glu Ile Glu Leu Ile Gly Gly Gly
            20   25   30
Lys Met Glu Lys Gln Asn Leu Lys Leu Asp Val Lys Glu Ile Glu Phe
        35   40   45
Pro Glu Thr Val Phe Ser Arg Asp Ile Glu Thr Arg Val Ile Gln Val
    50   55   60
Ile Ile Leu His Cys Leu Ala Lys Ile Asn Gly Val Ser Leu Leu Gly
65   70   75   80

1142

```
Gly Asn Leu Ile Asp Ala Leu Phe Gly Arg Asp Ile Glu Arg Met Lys
                85                  90                  95
Gly Ile Tyr Val Glu Gln Asp Ser Lys Asn His Leu Val Lys Val Arg
                100                 105                 110
Val Glu Val Asn Val Asp Tyr Gly Val Ser Ile Pro Glu Lys Thr Glu
                115                 120                 125
Glu Ile Gln Gly Cys Ile Val Ser Glu Ile Ser Glu Tyr Thr Gly Leu
            130                 135                 140
His Val Ala Ala Val His Val Ile Ile Lys Gly Leu Thr Gln Pro Lys
145                 150                 155                 160
Asp Arg Ile Asp Glu Glu Ile Glu Glu Glu Val Ser Val Gln Asp Leu
                165                 170                 175
Pro Ser Pro Glu Asp Phe Leu Leu Glu Asn Ser Glu Gly
                180                 185
```

        <210> 942
        <211> 612
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 942

```
Asp Ala Thr Thr Asp Ile Ile Leu Val Met Arg Ile Glu Asp Phe Ser
1               5                   10                  15
Leu Lys Leu Ile Pro Ser Ser Pro Gly Val Tyr Leu Met Lys Asp Val
                20                  25                  30
His Asp Gln Val Leu Tyr Ile Gly Lys Ala Lys Asn Leu Lys Asn Arg
            35                  40                  45
Leu Ala Ser Tyr Phe His Glu Lys Gly Asp Ser Arg Glu Arg Ile Pro
    50                  55                  60
Phe Leu Met Lys Lys Thr Ala Ser Ile Glu Thr Ile Val Val Ser Asn
65                  70                  75                  80
Glu Thr Glu Ala Leu Leu Leu Glu Asn Asn Leu Ile Lys Gln His His
                85                  90                  95
Pro Lys Tyr Asn Val Leu Leu Lys Asp Asp Lys Thr Phe Phe Cys Leu
                100                 105                 110
Ala Ile Ser Leu Ser His Ser Trp Pro Lys Val Glu Ala Ile Arg Thr
            115                 120                 125
Lys Ala Ile Thr Ser Ser Gln Arg Gln Leu Ile Phe Gly Pro Tyr Val
            130                 135                 140
Ser Ala Glu Ala Cys His Thr Leu Leu Glu Val Ile Ser Gln Trp Phe
145                 150                 155                 160
Pro Leu Arg Thr Cys Ser Asp Arg Glu Phe Ala Leu Arg Lys Arg Pro
                165                 170                 175
Cys Ile Leu Tyr Asp Met Lys Arg Cys Leu Ala Pro Cys Val Gly Tyr
                180                 185                 190
Cys Thr Pro Glu Glu Tyr Gln Gly Thr Leu Asp Lys Ala Ile Leu Phe
            195                 200                 205
Leu Lys Gly Lys Ile Glu Glu Val Val Lys Asp Leu Glu Lys Val Ile
    210                 215                 220
Gln Lys Ala Ser Asp Asn Leu Glu Phe Glu Gln Ala Ala Asn Tyr Tyr
225                 230                 235                 240
Arg Thr Leu Ser Leu Ile Lys Gln Ala Met Ala Lys Gln Gln Val Glu
                245                 250                 255
Lys Phe His Phe Gln Asn Ile Asp Ala Leu Gly Leu Tyr Arg His Lys
                260                 265                 270
Gln Arg Thr Ile Leu Thr Leu Leu Thr Val Arg Ser Gly Lys Leu Leu
            275                 280                 285
Gly Ala Arg His Phe Ser Phe Phe Glu Asn Ala Gln Glu Asp Gln Asp
            290                 295                 300
Leu Leu Ser Ser Phe Ile Leu Gln Tyr Tyr Val Ser Gln Pro Tyr Ile
305                 310                 315                 320
```

                                    1143

Pro Lys Glu Ile Leu Thr Pro Leu Pro Leu Glu Phe Pro Thr Leu Ser
        325   330   335
Tyr Val Leu Asn Ala Glu Ser Pro Pro Arg Leu Arg Ser Pro Lys Thr
        340   345   350
Gly Tyr Gly Lys Glu Leu Leu Asp Leu Ala Tyr Arg Asn Ala Lys Ala
        355   360   365
Tyr Ala Ala Thr Thr Leu Pro Ser Ser Thr Leu Pro Tyr Gln Asp Phe
    370   375   380
Gln Asn Ile Leu Arg Met Ser Gln Tyr Pro Tyr Arg Ile Glu Cys Tyr
385   390   395   400
Asp Asn Ala His Met Gln Gly Ala His Ala Thr Gly Val Tyr Ile Val
                405   410   415
Phe Glu Asn Asn Gly Phe Asp Pro Lys Gln Tyr Arg Thr Phe Ser Ile
        420   425   430
Asp Ser Glu Lys Thr Gln Asn Asp Leu Ala Leu Leu Glu Glu Val Leu
        435   440   445
Leu Arg Arg Phe His Ser Leu Thr Thr Ala Leu Pro Asp Met Ile Val
        450   455   460
Val Asp Gly Gly Lys Thr His Tyr Asn Lys Thr Lys Lys Ile Ile Gln
465   470   475   480
Thr Leu Asn Leu Thr Gly Ile Gln Val Val Thr Ile Ala Lys Glu Lys
                485   490   495
Ser Asn His Ser Arg Gly Leu Asn Lys Glu Lys Ile Phe Cys Glu Thr
        500   505   510
Phe Pro Glu Gly Phe Ser Leu Pro Pro Thr Ser Asn Leu Leu Gln Phe
        515   520   525
Phe Gln Ile Leu Arg Asp Glu Ala His Arg Phe Ala Ile Ser Lys His
        530   535   540
Arg Lys Lys Arg Gly Lys Ala Leu Phe Glu Gln Glu Lys Ile Pro Gly
545   550   555   560
Ile Gly Glu Val Lys Arg Lys Arg Leu Leu Gln Lys Phe Lys Ser Trp
                565   570   575
Lys Gln Val Met Leu Ser Ser Gln Glu Glu Leu Glu Ala Ile Pro Gly
                580   585   590
Leu Thr Lys Lys Asp Ile Ala Val Leu Leu Ala Arg Gln Lys Asp Phe
        595   600   605
Asn Lys Ser Asp
    610

        <210> 943
        <211> 829
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 943
Val Met Thr Glu Lys Lys Pro Thr Pro Met Met Glu Gln Trp His Gln
1   5   10   15
Cys Lys Glu Lys Ala Gly Asp Ser Val Leu Leu Phe Arg Met Gly Asp
        20   25   30
Phe Tyr Glu Ala Phe Tyr Asp Asp Ala Val Leu Leu Ser Gln His Leu
    35   40   45
Glu Leu Thr Leu Thr Gln Arg Gln Gly Ile Pro Met Ser Gly Ile Pro
    50   55   60
Val Ser Thr Val Asp Thr Tyr Val Asp Arg Leu Ile Gly Lys Gly Phe
65   70   75   80
Lys Val Ala Val Ala Glu Gln Phe Gly Glu Pro Ala Lys Glu Lys Glu
                85   90   95
Ser Lys Lys Ile Gly Pro Met Ala Arg Asp Ile Gln Arg Phe Val Thr
        100   105   110
Pro Gly Thr Leu Leu Ser Ser Thr Leu Leu Gln Glu Lys Phe Asn Asn
        115   120   125

1144

```
Tyr Ile Val Ala Ile Asn Arg Ile Gly Ser Leu Phe Gly Phe Ala Cys
    130                 135             140
Leu Asp Leu Ser Thr Gly Ser Phe Phe Ile Glu Glu Cys Glu Asn Thr
145             150             155                 160
Lys Glu Leu Val Asp Glu Ile Cys Arg Leu Ala Pro Ser Glu Val Leu
                165             170             175
Ser Cys Asn Lys Phe Tyr Asn Lys Glu Thr Ala Ile Val Met Gln Leu
            180             185             190
Gln Gln His Leu Lys Leu Thr Leu Ser Thr Tyr Ala Asp Trp Ala Phe
        195             200             205
Glu His Lys Phe Ala Ser Gln Lys Leu Thr Thr His Phe Gln Val Ala
    210             215             220
Ser Leu Asp Gly Phe Gly Leu Lys Gly Leu Val Pro Ala Ile Asn Ala
225             230             235                 240
Ala Gly Gly Leu Leu Ser Tyr Ile Gln Asp Lys Leu Leu Leu Pro Thr
            245             250             255
Lys His Ile Ala Ile Pro Gln Thr Arg Gly Lys Gln Gln Lys Leu Leu
            260             265             270
Ile Asp Thr Ala Ser Gln Val Asn Leu Glu Leu Leu Ala Pro Leu Asn
        275             280             285
Asp Pro Gln Gly Lys Asn Ser Leu Leu Arg Ile Met Asp His Thr Ser
    290             295             300
Thr Pro Met Gly Gly Arg Leu Leu Arg Gln Ile Leu Ile Ser Pro Phe
305             310             315                 320
Tyr Asn Pro Lys Glu Ile Leu Val Arg Gln Asp Ala Val Glu Phe Phe
            325             330             335
Leu Arg Gln Val Thr Leu Arg Lys Asn Ile Lys Thr Tyr Leu Cys Gln
            340             345             350
Val Arg Asp Ile Glu Arg Leu Met Thr Lys Val Thr Thr Gly Leu Ala
    355             360             365
Gly Pro Arg Asp Ile Gly Thr Leu Arg Asp Ser Phe Ser Ala Gly Ala
    370             375             380
Gln Ile Tyr Glu Gln Leu Ala Ser Ala Thr Leu Pro Glu Phe Phe Ile
385             390             395                 400
Asp Lys Cys Ser Leu Asp Thr Lys Leu Ala Ser Leu Ile Ala Leu Leu
            405             410             415
Ser Lys Ser Leu Asn Gly Asp Leu Pro Leu Arg Val Ser Asp Gly Asn
            420             425             430
Ile Phe Val Asp Glu Phe His Asn Asp Leu Lys Arg Leu Arg His Asn
    435             440             445
Gln Glu His Ser Gln Glu Trp Ile Trp Glu Tyr Gln Glu Arg Ile Arg
    450             455             460
Lys Glu Thr Gly Ile Lys Lys Leu Lys Ile Cys Phe Ala Gln Ala Leu
465             470             475                 480
Gly Tyr Tyr Ile Glu Val Ser Ser Glu Phe Ala Pro Gln Leu Pro Lys
            485             490             495
Asp Phe Ile Arg Arg Gln Ser Arg Leu His Ala Glu Arg Phe Thr Thr
            500             505             510
Ile Glu Leu Gln Gln Phe Gln Asp Asp Met Ser Asn Ile Ser Glu Lys
    515             520             525
Leu Gln Thr Leu Glu Thr Gln Phe Phe Lys Asp Leu Cys Ser His Ile
    530             535             540
Leu Gln Leu Arg Thr Glu Ile Leu Ala Leu Ser Gln Ser Leu Ala Asp
545             550             555                 560
Leu Asp Tyr Ile Ile Ser Leu Ala Asp Leu Ala His Ala Gln Gly Tyr
            565             570             575
Cys Arg Pro His Val Asp Met Ser Asp Thr Leu Cys Ile Tyr Arg Gly
        580             585             590
Cys His Pro Val Ala Lys Thr Leu Val Asp Thr Gly Lys Phe Ile Pro
        595             600             605
```

                                    1145

```
Asn Asp Thr Glu Met Arg Gly Ser Gln Thr Arg Met Ile Leu Leu Thr
    610             615             620
Gly Pro Asn Met Ala Gly Lys Ser Thr Tyr Ile Arg Gln Ile Ala Leu
625             630             635             640
Leu Val Ile Met Ala Gln Met Gly Ser Tyr Ile Pro Ala Lys Ser Ala
            645             650             655
His Ile Gly Val Ile Asp Lys Ile Phe Thr Arg Ile Gly Ala Gly Asp
            660             665             670
Asn Leu Ser Lys Gly Met Ser Thr Phe Met Val Glu Met Ala Glu Thr
            675             680             685
Ala Asn Ile Leu His Asn Ala Thr Asp Arg Ser Leu Val Ile Leu Asp
    690             695             700
Glu Val Gly Arg Gly Thr Ser Thr Tyr Asp Gly Leu Ala Ile Ala Gln
705             710             715             720
Ala Val Val Glu Tyr Leu Leu Phe Thr Asp Lys Lys Lys Ala Lys Thr
            725             730             735
Leu Phe Ala Thr His Tyr Lys Glu Leu Thr Thr Leu Glu Asp His Cys
            740             745             750
Pro His Val Glu Asn Phe His Ala Gly Val Lys Asp Lys Ala Gly Gln
    755             760             765
Pro Val Phe Leu Tyr Glu Ile Leu Lys Gly His Ser Gln Lys Ser Phe
    770             775             780
Gly Ile His Val Ala Arg Leu Ala Gly Phe Pro Leu Cys Val Val Ser
785             790             795             800
Arg Ala Gln Gln Ile Leu Arg Gln Leu Glu Gly Pro Glu Ser Ile Thr
            805             810             815
Arg Pro Ala Gln Asp Lys Met Gln Gln Leu Thr Leu Phe
            820             825


        <210> 944
        <211> 600
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 944
Asn Cys Ser Ile Thr Lys Leu Arg Thr Ala Met Tyr Thr Glu Glu Ser
1               5               10              15
Leu Asp Asn Leu Arg His Ser Ile Asp Ile Val Asp Val Leu Ser Glu
            20              25              30
His Ile His Leu Lys Arg Ser Gly Ala Thr Tyr Lys Ala Cys Cys Pro
            35              40              45
Phe His Thr Glu Lys Thr Pro Ser Phe Ile Val Asn Pro Ala Gly Ala
    50              55              60
His Tyr His Cys Phe Gly Cys Gly Ala His Gly Asp Ala Ile Gly Phe
65              70              75              80
Leu Met Gln His Leu Gly Tyr Ser Phe Thr Glu Ala Ile Leu Val Leu
            85              90              95
Ser Lys Lys Phe Gln Val Asp Leu Val Leu Gln Pro Lys Asp Ser Gly
            100             105             110
Tyr Thr Pro Pro Gln Gly Leu Lys Glu Glu Leu Arg His Ile Asn Ser
    115             120             125
Glu Ala Glu Thr Phe Phe Arg Tyr Cys Leu Tyr His Leu Pro Glu Ala
    130             135             140
Arg His Ala Leu Gln Tyr Leu Tyr His Arg Gly Phe Ser Pro Asp Thr
145             150             155             160
Ile Asp Arg Phe His Leu Gly Tyr Gly Pro Glu Gln Ser Leu Phe Leu
            165             170             175
Gln Ala Met Glu Glu Arg Lys Ile Ser Gln Glu Gln Leu His Thr Ala
            180             185             190
Gly Phe Phe Gly Asn Lys Trp Phe Leu Phe Ala Arg Arg Ile Ile Phe
    195             200             205
```

1146

Pro Val His Asp Ala Leu Gly His Thr Ile Gly Phe Ser Ala Arg Lys
210   215   220

Phe Leu Glu Asn Ser Gln Gly Gly Lys Tyr Val Asn Thr Pro Glu Thr
225   230   235   240

Pro Ile Phe Lys Lys Ser Arg Ile Leu Phe Gly Leu Asn Phe Ser Arg
                245   250   255

Arg Arg Ile Ala Lys Glu Lys Lys Val Ile Leu Val Glu Gly Gln Ala
                260   265   270

Asp Cys Leu Gln Met Ile Asp Ser Gly Phe Asn Cys Thr Val Ala Ala
            275   280   285

Gln Gly Thr Ala Phe Thr Glu Glu His Val Lys Glu Leu Ser Lys Leu
        290   295   300

Gly Val Leu Lys Val Phe Leu Leu Phe Asp Ser Asp Glu Ala Gly Asn
305   310   315   320

Lys Ala Ala Leu Arg Val Gly Asp Leu Cys Gln Thr Ala Gln Met Ser
                325   330   335

Val Phe Val Cys Lys Leu Pro Gln Gly His Asp Pro Asp Ser Phe Leu
                340   345   350

Met Gln Arg Gly Ser Ser Gly Leu Ile Ala Leu Leu Glu Gln Ser Gln
            355   360   365

Asp Tyr Leu Thr Phe Leu Ile Ser Glu Lys Met Ser Ser Tyr Pro Lys
    370   375   380

Phe Gly Pro Arg Glu Lys Ala Leu Leu Val Glu Glu Ala Ile Arg Gln
385   390   395   400

Ile Lys His Trp Gly Ser Pro Ile Leu Val Tyr Glu His Leu Lys Gln
            405   410   415

Leu Ala Ser Leu Met Met Val Pro Glu Asp Met Val Leu Ser Leu Ala
            420   425   430

Asn Pro Gln Val Thr Ala Glu Pro Gln Asn Ile Pro Ile Lys Gln Lys
        435   440   445

Val Pro Lys Ile His Pro His Ile Val Met Glu Thr Asp Ile Leu Arg
    450   455   460

Cys Met Leu Phe Cys Gly Ser Asn Thr Lys Ile Leu Tyr Thr Ala Gln
465   470   475   480

Phe Tyr Phe Val Pro Glu Asp Phe Lys His Pro Glu Cys Arg Lys Leu
            485   490   495

Phe Ala Phe Met Ile Ser Tyr Tyr Glu Lys Tyr Arg Lys Asn Val Pro
            500   505   510

Phe Asp Glu Ala Cys Gln Val Leu Ser Asp Ser Gln Ile Leu Gln Leu
        515   520   525

Leu Thr Lys Arg Arg Leu Asn Thr Glu Ala Leu Asp Thr Ile Phe Val
    530   535   540

Gln Ser Leu Gln Lys Met Ala Asp Arg Arg Trp Arg Glu Gln Cys Lys
545   550   555   560

Pro Leu Ser Leu Asn Gln Asn Ile Gln Asp Lys Lys Leu Glu Ile Leu
            565   570   575

Glu Asp Tyr Val Gln Leu Arg Lys Asp Arg Thr Ile Ile Thr Leu Leu
            580   585   590

Asp Pro Glu Ser Glu Leu Ile Pro
        595   600

        <210> 945
        <211> 89
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 945
Phe Phe Met Lys Ser Phe Lys Phe Leu Leu Pro Phe Leu Ser Val Ile
 1   5   10   15

Leu Cys Cys Gly Asn Leu Leu Ser Ser Pro Arg Ser Arg Ala Ile Ser
            20   25   30

1147

Val Thr Glu Ser Ile Gly Met Ser Ala Val Lys Thr Leu Val Leu Ser
          35   40   45
Glu Lys Ala His Glu Phe Leu Glu Gly Ile Gly Tyr Gly Val Gly Ala
      50   55   60
Ser Ser Ile Leu Arg Asp Trp Gln Thr Gln Gln Trp Leu Glu Ile Glu
65   70   75   80
Ser Leu Leu Ala Gln Asn Glu Val Met
                85

        <210> 946
        <211> 165
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 946
Ile Lys Ile Met Met His Arg Tyr Phe Ile Pro Leu Leu Ala Leu Leu
 1   5   10   15
Ile Phe Ser Pro Ser Leu Val Arg Ala Glu Leu Gln Pro Ser Glu Asn
          20   25   30
Arg Lys Gly Gly Trp Pro Thr Gln Leu Ser Cys Ala Glu Gly Ser Gln
          35   40   45
Leu Phe Cys Lys Phe Glu Ala Ala Tyr Asn Asn Ala Ile Glu Glu Gly
      50   55   60
Lys Pro Gly Ile Leu Val Phe Phe Ser Glu Arg Pro Thr Pro Glu Phe
65   70   75   80
Ala Asp Leu Thr Asn Gly Ser Phe Ser Leu Ser Thr Pro Ile Ala Lys
                85   90   95
Gly Phe Asn Val Val Val Leu Cys Pro Gly Leu Ile Ser Pro Leu Asp
          100   105   110
Phe Phe His Lys Met Asp Pro Val Ile Leu Tyr Met Gly Ser Phe Leu
          115   120   125
Glu Met Phe Pro Glu Val Glu Ala Val Ser Gly Pro Arg Leu Cys Tyr
      130   135   140
Ile Leu Ile Asp Glu Gln Gly Gly Ala Gln Cys Gln Ala Val Leu Pro
145   150   155   160
Leu Glu Thr Lys Asn
                165

        <210> 947
        <211> 220
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 947
Ser Ile Phe Lys Asn Lys Ile Leu Pro Ser Tyr Phe Gly His Asn Phe
 1   5   10   15
Asp Gln Leu Arg Arg His Tyr Met Arg Ile Ala Leu Ser Leu Leu Ser
          20   25   30
Leu Leu Met Ile Phe Pro Ile Phe Gly Glu Glu Ser Arg Pro Gly Ser
      35   40   45
Glu Asp Gly Asn Ser Asn Thr Gln Glu Ile Val Gly Ser Gln Asp Thr
      50   55   60
Gln Val Cys Leu Tyr His Ser Tyr Glu Gln Gly Leu Gln Ala Ser Arg
65   70   75   80
Ile Glu Gly Lys Pro Leu Val Ile Val Val Leu Cys Asn Ser Gly Asp
                85   90   95
Asp Gly Gln Ala Cys Thr Ile Gly Leu Ser Glu Thr Cys Glu Glu Val
          100   105   110
Leu Ser Val Leu Ser Gly Ser Ile Phe Ser Glu Leu Ala Asn Phe Val
          115   120   125

                        1148

Val Leu Val Pro Ser Gly Val Asn Pro Leu Ile Tyr Pro Pro Ile Glu
    130   135   140
Asp Pro Ile Leu Ala Glu Ile Val Lys Phe Lys Glu Leu Phe Lys Asp
145   150   155   160
Glu Ser Phe Pro Thr Gly Leu Ser Ile Ile Val Val Gly Val Thr Pro
            165   170   175
Glu Gly Pro Gly Asp Ile Ile Glu Val Ser Pro Val Ser Leu Thr Val
            180   185   190
Glu Glu Glu Glu Thr Leu Pro Ser Glu Gln Thr Thr Glu Val Glu Ser
        195   200   205
Thr Ser Glu Leu Gln Ser Glu Asp Pro Ala Ile Ala
    210   215   220

        <210> 948
        <211> 1024
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 948
Gly Glu Cys Gln Lys Lys Lys Cys Tyr Thr Leu Glu Ser Phe Val Ser
  1   5   10   15
Glu His Pro Leu Thr Leu Gln Ser Met Ile Ala Thr Ile Leu Arg Phe
            20   25   30
Trp Ser Glu Gln Gly Cys Val Ile His Gln Gly Tyr Asp Leu Glu Val
        35   40   45
Gly Ala Gly Thr Phe Asn Pro Ala Thr Phe Leu Arg Ala Leu Gly Pro
    50   55   60
Glu Pro Tyr Lys Ala Ala Tyr Val Glu Pro Ser Arg Arg Pro Gln Asp
65   70   75   80
Gly Arg Tyr Gly Val His Pro Asn Arg Leu Gln Asn Tyr His Gln Leu
            85   90   95
Gln Val Ile Leu Lys Pro Val Pro Glu Asn Phe Leu Ser Leu Tyr Thr
            100   105   110
Glu Ser Leu Arg Ala Ile Gly Leu Asp Leu Arg Asp His Asp Ile Arg
        115   120   125
Phe Ile His Asp Asp Trp Glu Asn Pro Thr Ile Gly Ala Trp Gly Leu
    130   135   140
Gly Trp Glu Val Trp Leu Asn Gly Met Glu Ile Thr Gln Leu Thr Tyr
145   150   155   160
Phe Gln Ala Ile Gly Ser Lys Pro Leu Asp Thr Ile Ser Gly Glu Ile
            165   170   175
Thr Tyr Gly Ile Glu Arg Ile Ala Met Tyr Leu Gln Lys Lys Ile Ser
            180   185   190
Ile Tyr Asp Val Leu Trp Asn Asp Thr Leu Thr Tyr Gly Gln Ile Thr
        195   200   205
Gln Ala Ser Glu Lys Ala Trp Ser Glu Tyr Asn Phe Asp Tyr Ala Asn
    210   215   220
Thr Glu Met Trp Phe Lys His Phe Glu Asp Phe Ala Glu Glu Ala Leu
225   230   235   240
Arg Thr Leu Lys Asn Gly Leu Ser Val Pro Ala Tyr Asp Phe Val Ile
            245   250   255
Lys Ala Ser His Ala Phe Asn Ile Leu Asp Ala Arg Gly Thr Ile Ser
        260   265   270
Val Thr Glu Arg Thr Arg Tyr Ile Ala Arg Ile Arg Gln Leu Thr Arg
        275   280   285
Leu Val Ala Asp Ser Tyr Val Glu Trp Arg Ala Ser Leu Asn Tyr Pro
    290   295   300
Leu Leu Ser Leu Ser Ser Thr Ser Glu Pro Lys Glu Thr Ser Glu Ser
305   310   315   320
Val Val Pro Met Ile Ser Ser Thr Glu Asp Leu Leu Leu Glu Ile Gly
            325   330   335

```
Ser Glu Glu Leu Pro Ala Thr Phe Val Pro Ile Gly Ile Gln Gln Leu
        340                 345             350
Glu Ser Leu Ala Arg Gln Val Leu Thr Asp His Asn Ile Val Tyr Glu
        355                 360             365
Gly Leu Glu Val Leu Gly Ser Pro Arg Arg Leu Ala Leu Leu Val Lys
        370                 375             380
Asn Val Ala Pro Glu Val Val Gln Lys Ala Phe Glu Lys Lys Gly Pro
385                 390                 395                 400
Met Leu Thr Ser Leu Phe Ser Pro Asp Gly Asp Val Ser Pro Gln Gly
        405                 410             415
Gln Gln Phe Phe Ala Ser Gln Gly Val Asp Ile Ser His Tyr Gln Asp
        420                 425             430
Leu Ser Arg His Ala Ser Leu Ala Ile Arg Thr Val Asn Gly Ser Glu
        435                 440             445
Tyr Leu Phe Leu Leu His Pro Glu Ile Arg Leu Arg Thr Ala Asp Ile
    450                 455             460
Leu Met Gln Glu Leu Pro Leu Leu Ile Gln Arg Met Lys Phe Pro Lys
465                 470                 475                 480
Lys Met Val Trp Asp Asn Ser Gly Val Glu Tyr Ala Arg Pro Ile Arg
        485                 490             495
Trp Leu Val Ala Leu Tyr Gly Glu His Ile Leu Pro Ile Thr Leu Gly
        500                 505             510
Thr Ile Ile Ala Ser Arg Asn Ser Phe Gly His Arg Gln Leu Asp Pro
        515                 520             525
Arg Lys Ile Ser Ile Ser Ser Pro Gln Asp Tyr Val Glu Thr Leu Arg
    530                 535             540
Gln Ala Cys Val Val Val Ser Gln Lys Glu Arg Arg Met Ile Ile Glu
545                 550                 555                 560
Gln Gly Leu Arg Ala His Ser Ser Asp Thr Ile Ser Ala Ile Pro Leu
        565                 570             575
Pro Arg Leu Ile Glu Glu Ala Thr Phe Leu Ser Glu His Pro Phe Val
        580                 585             590
Ser Cys Gly Gln Phe Ser Glu Gln Phe Cys Ala Leu Pro Lys Glu Leu
        595                 600             605
Leu Ile Ala Glu Met Val Asn His Gln Lys Tyr Phe Pro Thr His Glu
    610                 615             620
Thr Ser Ser Gly Ala Ile Ser Asn Phe Phe Ile Val Val Cys Asp Asn
625                 630                 635                 640
Ser Pro Asn Asp Thr Ile Ile Glu Gly Asn Glu Lys Ala Leu Thr Pro
            645             650                 655
Arg Leu Thr Asp Gly Glu Phe Leu Phe Lys Gln Asp Leu Gln Thr Pro
        660                 665                 670
Leu Thr Thr Phe Ile Glu Lys Leu Lys Ser Val Thr Tyr Phe Glu Ala
        675                 680                 685
Leu Gly Ser Leu Tyr Asp Lys Val Glu Arg Leu Lys Ala His Gln Arg
        690                 695                 700
Val Phe Ser Thr Phe Ser Ser Leu Ala Ala Ser Glu Asp Leu Asp Ile
705                 710                 715                 720
Ala Ile Gln Tyr Cys Lys Ala Asp Leu Val Ser Ala Val Val Asn Glu
            725                 730                 735
Phe Pro Glu Leu Gln Gly Ile Met Gly Glu Tyr Tyr Leu Lys His Ala
        740                 745                 750
Asn Leu Pro Thr Ala Ser Ala Val Ala Val Gly Glu His Leu Arg His
        755                 760                 765
Ile Thr Met Gly Gln Lys Leu Ser Thr Ile Gly Thr Leu Leu Ser Leu
    770                 775                 780
Leu Asp Arg Leu Asp Asn Leu Leu Ala Cys Phe Ile Leu Gly Leu Lys
785                 790                 795                 800
Pro Thr Ser Ser His Asp Pro Tyr Ala Leu Arg Arg Gln Ser Leu Glu
        805                 810                 815
```

1150

```
Val Leu Thr Leu Val Ser Ala Ser Arg Leu Pro Ile Asp Leu Ala Ser
            820                     825                 830
Leu Leu Asp Arg Leu Ala Asp His Phe Pro Ser Thr Ile Glu Glu Lys
            835                     840                 845
Val Trp Asp Lys Ser Lys Thr Ile His Glu Ile Leu Glu Phe Ile Trp
    850                     855                 860
Gly Arg Leu Lys Thr Phe Met Gly Ser Leu Glu Phe Arg Lys Asp Glu
865                     870                 875                 880
Ile Ala Ala Val Leu Ile Asp Ser Ala Thr Lys Asn Pro Ile Glu Ile
            885                     890                 895
Leu Asp Thr Ala Glu Ala Leu Gln Leu Leu Lys Glu Glu His Thr Glu
            900                     905                 910
Lys Leu Ala Val Ile Thr Thr Thr His Asn Arg Leu Lys Lys Ile Leu
    915                     920                 925
Ser Ser Leu Lys Leu Ser Met Thr Ser Ser Pro Ile Glu Val Leu Gly
    930                     935                 940
Asp Arg Glu Ser Asn Phe Lys Gln Val Leu Asp Ala Phe Pro Gly Phe
945                     950                 955                 960
Pro Lys Glu Thr Ser Ala His Ala Phe Leu Glu Tyr Phe Leu Ser Leu
            965                 970                 975
Ala Asp Leu Ser Asn Asp Ile Gln Asp Phe Leu Asn Thr Val His Ile
            980                     985                 990
Ala Asn Asp Asp Gly Ala Ile Arg Asn Leu Arg Ile Ser Leu Leu Leu
            995                     1000                1005
Thr Ala Met Asp Lys Phe Ser Leu Cys His Trp Glu Ser Val Ala Val
    1010                    1015                1020
```

        <210> 949
        <211> 209
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 949
```
Gly Ser Arg Val Gly Leu Pro Asn Tyr Ile Thr Phe Ser Arg Leu Phe
1               5                   10                  15
Ile Thr Pro Ile Phe Met Ile Leu Tyr Leu Lys Gly Lys Trp Phe Gly
        20                  25                  30
Ile Thr Pro Val Val Leu Pro Tyr Val Leu Leu Ala Leu Leu Ala Ile
        35                  40                  45
Ser Glu Leu Thr Asp Ala Ile Asp Gly Tyr Val Ala Arg Lys Phe Ser
    50                  55                  60
Gln Val Thr Asp Leu Gly Lys Leu Leu Asp Pro Met Ala Asp Ser Ile
65                  70                  75                  80
Tyr Arg Ile Ser Ile Tyr Leu Thr Phe Thr Gln Pro Pro Val Asn Leu
            85                  90                  95
Pro Leu Leu Leu Val Phe Ile Phe Leu Ala Arg Asp Ser Val Ile Ser
            100                 105                 110
Thr Leu Arg Thr Val Cys Ala Phe Arg Gly Arg Val Val Ala Ala Arg
    115                 120                 125
Ala Ser Gly Lys Leu Lys Ala Ile Leu Gln Gly Val Ser Phe Phe Leu
    130                 135                 140
Ile Leu Leu Val Met Ile Pro His Ser Leu Gly Leu Leu Ser Gln Asn
145                 150                 155                 160
Gly Leu Glu Ile Phe Ala Ser Val Thr Val Ser Ile Ile Ala Val Tyr
            165                 170                 175
Ser Ile Ala Ser Gly Ile Glu Tyr Phe Trp Met Asn Lys Asn Phe Leu
            180                 185                 190
Ser Gln Arg Ala Lys Thr Lys Asp Ser Glu Lys Asn His Glu Ser Lys
    195                 200                 205
Asp
```

<210> 950
<211> 479
<212> PRT
<213> Chlamydia pneumoniae

<400> 950

```
Gly Glu Ser Met Arg Ile Val Gln Val Ala Val Glu Phe Thr Pro Ile
1               5                   10                  15
Val Lys Val Gly Gly Leu Gly Asp Ala Val Ala Ser Leu Ser Lys Glu
                20                  25                  30
Leu Ala Lys Gln Asn Asp Val Glu Val Leu Leu Pro His Tyr Pro Leu
            35                  40                  45
Ile Ser Lys Phe Ser Ser Ser Gln Val Leu Ser Glu Arg Ser Phe Tyr
        50                  55                  60
Tyr Glu Phe Leu Gly Lys Gln Gln Ala Ser Ala Ile Ser Tyr Ser Tyr
65                  70                  75                  80
Glu Gly Leu Thr Leu Thr Ile Ile Thr Leu Asp Ser Gln Ile Glu Leu
                85                  90                  95
Phe Ser Thr Thr Ser Val Tyr Ser Glu Asn Asn Val Val Arg Phe Ser
            100                 105                 110
Ala Phe Ala Ala Ala Ala Ala Ala Tyr Leu Gln Glu Ala Asp Pro Ala
            115                 120                 125
Asp Ile Val His Leu His Asp Trp His Val Gly Leu Leu Ala Gly Leu
        130                 135                 140
Leu Lys Asn Pro Leu Asn Pro Val His Ser Lys Ile Val Phe Thr Ile
145                 150                 155                 160
His Asn Phe Gly Tyr Arg Gly Tyr Cys Ser Thr Gln Leu Leu Ala Ala
                165                 170                 175
Ser Gln Ile Asp Asp Phe His Leu Ser His Tyr Gln Leu Phe Arg Asp
            180                 185                 190
Pro Gln Thr Ser Val Leu Met Lys Gly Ala Leu Tyr Cys Ser Asp Tyr
            195                 200                 205
Ile Thr Thr Val Ser Leu Thr Tyr Val Gln Glu Ile Ile Asn Asp Tyr
        210                 215                 220
Ser Asp Tyr Glu Leu His Asp Ala Ile Leu Ala Arg Asn Ser Val Phe
225                 230                 235                 240
Ser Gly Ile Ile Asn Gly Ile Asp Glu Asp Val Trp Asn Pro Lys Thr
                245                 250                 255
Asp Pro Ala Leu Ala Val Gln Tyr Asp Ala Ser Leu Leu Ser Glu Pro
            260                 265                 270
Asp Val Leu Phe Thr Lys Lys Glu Glu Asn Arg Ala Val Leu Tyr Glu
            275                 280                 285
Lys Leu Gly Ile Ser Ser Asp Tyr Phe Pro Leu Ile Cys Val Ile Ser
        290                 295                 300
Arg Ile Val Glu Glu Lys Gly Pro Glu Phe Met Lys Glu Ile Ile Leu
305                 310                 315                 320
His Ala Met Glu His Ser Tyr Ala Phe Ile Leu Ile Gly Thr Ser Gln
                325                 330                 335
Asn Glu Val Leu Leu Asn Glu Phe Arg Asn Leu Gln Asp Cys Leu Ala
            340                 345                 350
Ser Ser Pro Asn Ile Arg Leu Ile Leu Asp Phe Asn Asp Pro Leu Ala
            355                 360                 365
Arg Leu Thr Tyr Ala Ala Ala Asp Met Ile Cys Ile Pro Ser His Arg
370                 375                 380
Glu Ala Cys Gly Leu Thr Gln Leu Ile Ala Met Arg Tyr Gly Thr Val
385                 390                 395                 400
Pro Leu Val Arg Lys Thr Gly Gly Leu Ala Asp Thr Val Ile Pro Gly
            405                 410                 415
Val Asn Gly Phe Thr Phe Phe Asp Thr Asn Asn Phe Asn Glu Phe Arg
            420                 425                 430
```

1152

Ala Met Leu Ser Asn Ala Val Thr Thr Tyr Arg Gln Glu Pro Asp Val
        435   440   445
Trp Leu Asn Leu Ile Glu Ser Gly Met Leu Arg Ala Ser Gly Leu Asp
    450   455   460
Ala Met Ala Lys His Tyr Val Asn Leu Tyr Gln Ser Leu Leu Ser
465   470   475

        <210> 951
        <211> 199
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 951
Arg Thr Ala Leu Leu Ala Gln Asp Tyr Gly Glu Asn Asn Ile Met Glu
  1   5   10   15
Leu Val Val Thr Ser Arg Glu Thr Gly Lys Lys Ser Phe Leu Lys Lys
            20   25   30
Ile Arg Gln Gln Gly Gly Ile Pro Ala Val Val Tyr Ser Ala Gly Lys
        35   40   45
Ser Leu Ala Asn Ile Thr Val Asp Ala Leu Val Phe Lys Lys Phe Leu
    50   55   60
Ser Asn Leu Glu Ser Gly Ala Leu Ser Ser Thr Val Phe Ser Leu Ser
65   70   75   80
Tyr Glu Gly Arg Ile Ile Lys Ala Leu Val Lys Asp Ile Gln Tyr Gln
                85   90   95
Ile Thr Thr Tyr Asp Val Ile His Leu Asp Phe Glu Glu Leu Val Glu
            100   105   110
Asp Arg Pro Ile Lys Leu Asn Ile Pro Ile Arg Cys Ile Asn Ala Val
        115   120   125
Asp Cys Ile Gly Val Lys Leu Gly Gly Ser Leu Arg Gln Val Ile Arg
    130   135   140
Ala Val Arg Val Val Cys Lys Pro Lys Asp Ile Val Pro Phe Leu Glu
145   150   155   160
Leu Asp Val Arg Ser Val Gly Leu Ser Gln Thr Arg Lys Leu Ser Asp
                165   170   175
Ile Lys Ile Pro Ala Gly Ile Glu Thr Ile Thr Pro Leu Lys Glu Val
            180   185   190
Ala Ile Thr Val Ser Arg Arg
        195

        <210> 952
        <211> 186
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 952
Pro Ser Leu Glu Asp Asn Met Ala Lys Leu Ile Val Ala Ile Gly Asn
  1   5   10   15
Pro Arg His Gly Tyr Ala Asn Thr Arg His Asn Ala Gly Phe Leu Leu
            20   25   30
Ala Asp Arg Leu Val Glu Glu Leu Gln Gly Pro Pro Phe Lys Pro Leu
        35   40   45
Ser Lys Cys His Ala Leu Met Thr Leu Val Glu Ser Ser Ser Gly Pro
    50   55   60
Leu Val Phe Ile Lys Pro Thr Thr Phe Val Asn Leu Ser Gly Lys Ala
65   70   75   80
Val Val Leu Ala Lys Lys Tyr Phe Asn Val Ala Leu Ser His Ile Leu
                85   90   95
Val Leu Ala Asp Asp Val Asn Arg Ser Phe Gly Lys Leu Arg Leu Cys
            100   105   110

1153

```
Phe Asn Gly Gly Ser Gly Gly His Asn Gly Leu Lys Ser Ile Thr Ala
        115                 120                 125
Ser Leu Gly Ser Asn Glu Tyr Trp Gln Leu Arg Phe Gly Val Gly Arg
        130             135                 140
Pro Leu Glu Glu Gly Val Glu Leu Ser Asn Phe Val Leu Gly Lys Phe
145                 150                 155                 160
Ser Glu Glu Glu Asn Leu Gln Leu Gly Ser Ile Phe Val Glu Ala Ser
                165                 170                 175
Thr Leu Phe Thr Glu Trp Cys Ser Lys Phe
        180                 185
```

<210> 953
<211> 115
<212> PRT
<213> Chlamydia pneumoniae

<400> 953
```
Glu Phe Leu Met Gly Lys Lys Glu Asn Gln Leu Tyr Glu Gly Ala Tyr
1               5                   10                  15
Val Phe Ser Val Thr Leu Ser Glu Glu Ala Arg Arg Lys Ala Leu Asp
                20                  25                  30
Lys Val Ile Ser Gly Ile Thr Asn Tyr Gly Gly Glu Ile His Lys Ile
        35                  40                  45
His Asp Gln Gly Arg Lys Lys Leu Ala Tyr Thr Ile Arg Gly Ala Arg
        50                  55                  60
Glu Gly Tyr Tyr Tyr Phe Ile Tyr Phe Ser Val Ser Pro Gly Ala Ile
65                  70                  75                  80
Thr Glu Leu Trp Lys Glu Tyr His Leu Asn Glu Asp Leu Leu Arg Phe
                85                  90                  95
Met Thr Leu Arg Ala Asp Ser Val Lys Glu Val Leu Glu Phe Ala Ser
                100                 105                 110
Leu Pro Glu
        115
```

<210> 954
<211> 85
<212> PRT
<213> Chlamydia pneumoniae

<400> 954
```
Gly Glu Asn Met Asn Lys Pro Val His Asn Asn Glu His Arg Arg Lys
1               5                   10                  15
Arg Phe Asn Lys Lys Cys Pro Phe Val Ser Ala Gly Trp Lys Thr Ile
                20                  25                  30
Asp Tyr Lys Asp Val Glu Thr Leu Lys Lys Phe Ile Thr Glu Arg Gly
        35                  40                  45
Lys Val Leu Pro Arg Arg Ile Thr Gly Val Ser Ser Arg Phe Gln Gly
        50                  55                  60
Val Leu Ser Gln Ala Ile Lys Arg Ala Arg His Leu Gly Leu Leu Pro
65                  70                  75                  80
Phe Val Gly Glu Asp
                85
```

<210> 955
<211> 174
<212> PRT
<213> Chlamydia pneumoniae

<400> 955
```
Phe Lys Gly Arg Arg Met Lys Gln Gln Leu Leu Leu Leu Glu Asp Val
1               5                   10                  15
```

1154

Asp Gly Leu Gly Arg Ser Gly Asp Leu Ile Thr Ala Arg Pro Gly Tyr
            20   25   30
Val Arg Asn Tyr Leu Ile Pro Lys Lys Lys Ala Val Ile Ala Gly Ala
        35   40   45
Gly Thr Leu Arg Leu Gln Ala Lys Leu Lys Glu Gln Arg Leu Ile Gln
    50   55   60
Ala Ala Ala Asp Lys Ala Asp Ser Glu Arg Ile Ala Gln Ala Leu Lys
65   70   75   80
Asp Ile Val Leu Glu Phe Gln Val Arg Val Asp Pro Asp Asn Asn Met
                85   90   95
Tyr Gly Ser Val Thr Ile Ala Asp Ile Ile Ala Glu Ala Ala Lys Lys
            100   105   110
Asn Ile Phe Leu Val Arg Lys Asn Phe Pro His Ala His Tyr Ala Ile
        115   120   125
Lys Asn Leu Gly Lys Lys Asn Ile Pro Leu Lys Leu Lys Glu Glu Val
    130   135   140
Thr Ala Thr Leu Leu Val Glu Val Thr Ser Asp Asn Glu Tyr Val Thr
145   150   155   160
Val Leu Ala Gln Gly Lys Gln Thr Glu Glu Asn Gln Glu Gly
            165   170

        <210> 956
        <211> 150
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 956
Gly Arg Lys Val Cys Tyr Lys Asp Ile Met Gln Tyr Phe Ser Pro Ala
1   5   10   15
Lys Leu Asn Leu Phe Leu Lys Ile Trp Gly Lys Arg Phe Asp Asn Phe
            20   25   30
His Glu Leu Thr Thr Leu Tyr Gln Ala Ile Asp Phe Gly Asp Thr Leu
        35   40   45
Ser Leu Lys Asn Ser Met Lys Asp Ser Leu Ser Ser Asn Val Asn Glu
    50   55   60
Leu Leu Ser Pro Ser Asn Leu Ile Trp Lys Ser Leu Glu Ile Phe Arg
65   70   75   80
Arg Glu Thr Gln Ile His Gln Pro Val Ser Trp His Leu Asn Lys Ser
            85   90   95
Ile Pro Leu Gln Ser Gly Leu Gly Gly Gly Ser Ser Asn Ala Ala Thr
            100   105   110
Ala Leu Tyr Ala Leu Asn Glu His Phe Gln Thr His Ile Pro Ile Thr
        115   120   125
Thr Leu Gln Leu Trp Ala Arg Glu Ile Gly Ser Asp Val Pro Phe Phe
    130   135   140
Phe Leu Gln Glu Gln His
145   150

        <210> 957
        <211> 188
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 957
Arg Ala Phe Pro Asn Pro Tyr Ser Tyr Asn Asn Ile Ala Thr Leu Gly
1   5   10   15
Ser Arg Asn Arg Lys Arg Cys Ser Phe Phe Ser Ser Gly Thr Ala
        20   25   30
Leu Gly Lys Gly Arg Gly Glu His Leu Phe Ser Ile Lys Lys Leu Asn
        35   40   45

1155

His Lys His Lys Tyr Val Leu Tyr Leu Asp His Gln Gly Ile Pro Thr
    50   55   60

Glu Lys Ala Tyr Gln Ser Leu Leu Pro Gln Asp Tyr Ser Thr Gly Asn
65   70   75   80

His Asn Ala Cys Phe Tyr Gly Glu Asn Asp Leu Glu Lys Ser Val Phe
           85   90   95

Arg Ile Arg Thr Asp Leu Lys Asn Lys Lys His Met Leu Glu Arg Met
        100   105   110

Trp Ser Pro Phe Glu Ser His Val Leu Met Ser Gly Ser Gly Ala Thr
        115   120   125

Leu Phe Val Cys Tyr Leu Glu Glu Leu Glu Gln Asp Ser Lys Val Ser
        130   135   140

Ser Gln Ile His Ser Leu Ile Lys Gln Thr Gln Gly Ile Pro Val Ser
145   150   155   160

Arg Leu Tyr Arg Glu Pro His Trp Tyr Ser Leu Lys Gln Ser Thr Tyr
           165   170   175

Lys Asn Ser Pro Leu Glu Cys Phe Gln Pro Gln Ile
        180   185

      <210> 958
      <211> 455
      <212> PRT
      <213> Chlamydia pneumoniae

      <400> 958

Leu Val Trp Phe Ser Met Ile Leu Pro Pro Tyr Ser Tyr Ser Leu Lys
1   5   10   15

Ile Gly Ala Ala Val Leu Phe Phe Cys Ser Ile Leu His Thr Phe Leu
        20   25   30

Thr Pro Trp Leu Tyr Thr Leu Cys Gln Ser Tyr Glu His Lys Lys Leu
        35   40   45

Val Phe Pro Glu Cys Trp Lys Arg Tyr Ala Arg Leu Ser Glu Leu Phe
        50   55   60

Arg Ile Leu Ser Arg Val Glu Ile Val Phe Phe Leu Trp Ala Val Pro
65   70   75   80

Leu Phe Phe Trp Phe Leu Tyr Thr Glu Gly Tyr Arg Ile Ser Met Ala
        85   90   95

Tyr Phe Asn Ser Arg Asn Tyr Gly Phe Ala Val Phe Ile Met Val Ile
        100   105   110

Leu Ile Leu Leu Glu Ser Arg Pro Ile Val Tyr Phe Ala Glu Leu Val
        115   120   125

Leu Ser Ser Ile Ala Lys Leu Gly Lys Thr Ser Pro Lys Ser Trp Trp
        130   135   140

Trp Thr Leu Met Ile Ala Pro Pro Leu Leu Ser Cys Leu Leu Lys Glu
145   150   155   160

Thr Gly Ala Met Ile Ile Gly Ala Thr Leu Leu Met Arg His Phe Tyr
        165   170   175

Val Phe Ser Pro Ser Arg Arg Phe Ala Tyr Ala Thr Met Gly Leu Leu
        180   185   190

Phe Ser Asn Ile Ser Ile Gly Gly Leu Thr Ser Tyr Val Ser Ser Arg
        195   200   205

Ala Leu Phe Leu Ile Phe Pro Ala Leu Lys Trp Glu His Ser Phe Phe
        210   215   220

Leu Ser His Phe Ala Trp Lys Ala Ile Val Ala Ile Leu Ile Ser Thr
225   230   235   240

Thr Ile Tyr Tyr Phe Ile Phe Arg Lys Glu Phe Lys Lys Phe Pro Asp
           245   250   255

Ile Pro Ser Asp Lys Asp Pro Ser Val Glu Lys Val Pro Trp Trp Ile
        260   265   270

Ile Cys Val Asn Ile Ile Phe Val Gly Ser Ile Ile Leu Ser Arg Ser
        275   280   285

```
Thr Pro Leu Phe Met Gly Ala Leu Leu Leu Phe Tyr Leu Gly Phe Gln
    290                 295                 300
Lys Phe Thr Ile Phe Tyr Gln Asp Pro Ile Asn Leu Ser Lys Val Cys
305                 310                 315                 320
Tyr Val Gly Leu Phe Tyr Ala Gly Leu Val Val Phe Gly Asp Leu Gln
            325                 330                 335
Glu Trp Trp Val Leu Asn Leu Met Gln Gly Leu Ser Asp Phe Gly Tyr
            340                 345                 350
Met Thr Val Ser Tyr Thr Leu Ser Ile Phe Leu Asp Asn Ala Leu Val
        355                 360                 365
Asn Tyr Leu Val His Asn Leu Ser Val Ala Thr Asp Cys Tyr His Tyr
    370                 375                 380
Leu Val Val Ala Gly Cys Met Ala Ala Gly Gly Leu Thr Leu Val Ser
385                 390                 395                 400
Asn Ile Pro Asn Ile Val Gly Tyr Leu Ile Leu Arg Ser Ala Phe Pro
            405                 410                 415
Ser Ser Thr Ile His Met Gly Trp Leu Phe Leu Gly Ala Leu Gly Pro
            420                 425                 430
Ser Ile Ile Ser Leu Gly Val Phe Trp Leu Leu Lys Asn Val Pro Glu
        435                 440                 445
Phe Leu Tyr Cys Phe Phe Arg
    450                 455


        <210> 959
        <211> 950
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 959
Lys Ile Tyr Thr Arg Asn Cys Lys Met Phe Trp Lys Leu Leu Cys Pro
  1                 5                  10                  15
Ile Leu Ile Cys Thr Ser Leu Ser Ile Thr Ser Cys Glu Gln Gln Phe
            20                  25                  30
Lys Val Val Pro Asn Gln Cys Pro Leu Gln Val Ser Thr Pro Ala Ala
            35                  40                  45
Ala Asp Gln Lys Ile Glu Lys Ile Ile Cys Ser Asn Gly Leu Pro Leu
    50                  55                  60
Leu Ile Ile Ser Asp Pro Asn Leu Pro Thr Ser Gly Ala Ala Leu Leu
65                  70                  75                  80
Val Lys Thr Gly Asn Asn Ala Asp Pro Glu Glu Tyr Pro Gly Met Ala
                85                  90                  95
His Phe Thr Glu His Cys Val Phe Leu Gly Asn Glu Lys Tyr Pro Glu
            100                 105                 110
Val Ser Gly Phe Pro Gly Phe Leu Ser Glu Asn Asn Gly Val His Asn
        115                 120                 125
Ala Phe Thr Tyr Pro Asn Lys Thr Val Phe Val Phe Ser Val Glu His
    130                 135                 140
Ser Ala Phe Ser Asp Ala Leu Asp Gln Phe Val His Leu Phe Ile Asn
145                 150                 155                 160
Pro Lys Phe Arg Gln Glu Asp Leu Asp Arg Glu Lys Tyr Ala Val His
                165                 170                 175
Gln Glu Phe Ala Ala His Pro Leu Ser Asp Gly Arg Arg Val His Arg
            180                 185                 190
Ile Gln Gln Leu Val Ala Pro Gln Gly His Pro Cys Ala Arg Phe Gly
        195                 200                 205
Cys Gly Asn Ala Ser Thr Leu Thr Pro Val Thr Thr Glu Lys Met Ala
    210                 215                 220
Glu Trp Phe Lys Leu His Tyr Ser Pro Glu Asn Met Cys Ala Ile Ala
225                 230                 235                 240
Tyr Thr Ser Ala Pro Leu Ser Lys Ala Lys Lys Gln Phe Ser Lys Ile
                245                 250                 255
```

Phe Ser Gln Ile Pro Arg Ser Lys Asn Tyr Glu Arg Gln Glu Pro Phe
            260   265   270
Leu Pro Ser Gly Asp Thr Ser Ser Leu Lys Asn Leu Tyr Ile Asn Gln
            275   280   285
Ala Ile Gln Pro Thr Ser Asn Leu Glu Ile Tyr Trp His Ile Tyr Glu
            290   295   300
Ser Ser His Pro Ile Pro Leu Gly Cys Tyr Lys Ala Leu Ala Glu Val
305   310   315   320
Leu Arg Asn Glu Ser Lys Asn Ser Leu Val Ser Leu Leu Lys Asn Glu
            325   330   335
Gln Leu Ile Thr Asp Leu Asp Val Glu Phe Phe Arg Ser Ser Leu Asn
            340   345   350
Thr Gly Glu Phe Tyr Ile Ser Tyr Glu Leu Thr Glu Lys Gly Asp Lys
            355   360   365
His Tyr Ser Gln Val Ile Asp Ser Thr Phe Gln Tyr Leu Arg Tyr Ile
            370   375   380
Gln Glu His Gly Ile Pro Asn Tyr Thr Leu Glu Glu Ile Ser Thr Ile
385   390   395   400
Asn Ala Leu Asn Tyr Cys Tyr Ser Ser Lys Ser Pro Leu Phe Asp Leu
            405   410   415
Leu Cys Lys Gln Ile Val Ser Leu Gly Asn Glu Asp Leu Ser Thr Tyr
            420   425   430
Pro Tyr His Ser Leu Val Tyr Pro Lys Tyr Ser Ser Glu Asp Glu Ser
            435   440   445
Ala Leu Leu Asn Leu Val Ser Asp Pro Glu Gln Ala Arg Phe Val Leu
            450   455   460
Ser Ser Lys Asn Ser Glu His Trp Glu Glu Ala Thr Gln Leu His Asp
465   470   475   480
Pro Ile Phe Asp Met Thr Tyr Tyr Val Lys Ala Leu Asp Gly Val Gln
            485   490   495
Asp Tyr Gly Lys Val Gln Ser Leu Lys Pro Ile Ala Leu Pro Lys Pro
            500   505   510
Asn Leu Phe Ile Pro Lys Glu Val Thr Leu Pro Gly Val His Leu Leu
            515   520   525
Lys Lys Gln Glu Phe Pro Phe Ala Pro Ala Leu Ser Tyr Gln Asp Asp
            530   535   540
Lys Leu Thr Leu Tyr His Cys Glu Asp His Tyr Tyr Thr Ala Pro Lys
545   550   555   560
Leu Ser Ser Gln Ile Arg Ile Arg Ser Pro Gln Ile Ser Arg Ser Ser
            565   570   575
Pro Gln Phe Leu Val Ala Thr Glu Leu Tyr Cys Leu Ala Val Asn Asp
            580   585   590
Gln Leu Leu Arg Glu Tyr Tyr Pro Ala Thr Gln Ala Gly Leu Ser Phe
            595   600   605
Thr Ser Ala Leu Gly Gly Asp Gly Ile Asp Leu Arg Val Ser Gly Tyr
            610   615   620
Thr Thr Thr Val Pro Ala Leu Leu Asn Ser Ile Leu Thr Ser Leu Pro
625   630   635   640
Asn Leu Glu Ile Ser Tyr Glu Thr Phe Leu Val Tyr Lys Lys Gln Leu
            645   650   655
Leu Glu Leu Tyr Gln Gly Ala Leu Leu Asn Cys Pro Val Arg Ser Gly
            660   665   670
Leu Asp Glu Leu Ala Ser Gln Val Met Lys Glu Thr Tyr Ser Asn Thr
            675   680   685
Thr Lys Leu Ser Ala Leu Glu Lys Leu Ser Phe Ser Glu Phe Gln Ala
            690   695   700
Phe Ala Ser Asn Leu Phe Asn Ser Val His Leu Glu Val Met Val Leu
705   710   715   720
Gly Asn Leu Ser Glu Gln Gln Lys Lys Asp Tyr Leu Glu Met Leu Gln
            725   730   735

```
Val Phe Thr Ala Ser Arg Ser Ser His Ala Thr Lys Pro Phe Tyr Tyr
            740                 745                 750
Glu Leu Gln Ser Gln Glu Ile Ser Glu Ile His His Asp Tyr Pro Leu
            755                 760                 765
Thr Ala Asn Gly Met Leu Leu Leu Leu Gln Asp Lys Ser Ser Pro Ser
            770                 775                 780
Ile Gln Gly Lys Val Cys Ala Glu Met Leu Phe Glu Trp Leu His His
785                 790                 795                 800
Ile Thr Phe Glu Glu Leu Arg Thr Gln Gln Leu Gly Tyr Met Val
                805                 810                 815
Gly Ala Arg Tyr Arg Glu Phe Ala Ser Arg Pro Phe Gly Phe Leu Tyr
            820                 825                 830
Ile Arg Ser Asp Ala Tyr Ser Pro Glu Glu Leu Leu Ala Lys Thr Ser
            835                 840                 845
Leu Phe Leu Asn Lys Val Ser Ala Ser Pro Glu Lys Phe Gly Ile Ser
    850                 855                 860
Gln Glu Lys Phe Ala Asn Ile Arg Lys Ala Tyr Ile Asn Lys Ile Leu
865                 870                 875                 880
Glu Pro Glu His Ser Leu Asp Met Met Asn Ser Ala Leu Phe Ser Leu
                885                 890                 895
Ala Phe Glu Arg Pro Phe Val Glu Phe Ser Thr Pro Asp Leu Lys Ile
            900                 905                 910
Ala Ile Ala Glu Thr Leu Thr Tyr Glu Glu Phe Leu Lys Tyr Cys Gln
            915                 920                 925
Cys Phe Leu Ser Asn Glu Leu Gly Thr Gln Thr Ser Val Tyr Ile Arg
    930                 935                 940
Gly Thr Gln Lys Thr Ser
945                 950


    <210> 960
    <211> 337
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 960
Ile Tyr Arg Ala Ile Tyr Met Gln Phe Ser Arg Tyr Leu Arg Tyr Ala
1                 5                 10                  15
Phe Asp Asn Gln Tyr Leu Pro Glu Pro Leu Tyr Gln Lys Phe Ser Val
            20                  25                  30
Phe His Gln Asn Tyr Ile Asp Ala Ala Thr Lys Lys Ala Ala Ala Asp
        35                  40                  45
Gln Ala Glu Val Leu Cys Leu Gln Trp Val Lys Val Ile Ile Glu Asp
    50                  55                  60
Leu Lys Asn Pro Phe Ile Phe Pro Pro Tyr His Lys Lys Ile Arg Ala
65                  70                  75                  80
Pro Ile Asp Leu Phe Arg Leu Ser Ile Asp Phe Phe Ser Leu Val Ile
            85                  90                  95
Asp Asp Lys Asn Ser Arg Ile Leu Asn Leu His Arg Leu Lys Glu Ile
            100                 105                 110
Glu Glu Tyr Ile Ala Arg Gly Asp Asn Val Val Leu Leu Ala Asn His
        115                 120                 125
Gln Thr Glu Cys Asp Pro Gln Leu Met Tyr Tyr Ala Leu Gly Lys Thr
    130                 135                 140
His Pro Glu Leu Met Glu Asn Met Ile Phe Val Ala Gly Asp Arg Val
145                 150                 155                 160
Thr Ser Asp Pro Leu Ala Arg Pro Phe Ser Met Gly Cys Asp Leu Leu
            165                 170                 175
Cys Ile Tyr Ser Lys Arg His Ile Ala Thr Pro Pro Glu Leu Arg Glu
            180                 185                 190
Glu Lys Leu Leu His Asn Gln Lys Ser Met Gln Ile Leu Lys Thr Leu
            195                 200                 205
```

```
Leu Asn Glu Gly Gly Lys Phe Ile Tyr Val Ala Pro Ala Gly Gly Arg
    210                 215                 220
Asp Arg Lys Asn Ala Glu Gly Arg Leu Tyr Pro Ser Glu Phe Ser Pro
225                 230                 235                 240
Glu Ser Ile Glu Val Phe Arg Leu Leu Ala Lys Ala Ser Asn Gln Thr
            245                 250                 255
Thr His Phe Tyr Pro Phe Ala Leu Lys Thr Tyr Asp Ile Leu Pro Pro
            260                 265                 270
Pro Pro Lys Ile Glu Asn Ala Ile Gly Glu Gln Arg Ala Ile Phe Phe
        275                 280                 285
Ala Pro Val Phe Phe Asn Phe Gly Ala Glu Leu Phe Phe Asp Ala Leu
    290                 295                 300
Cys Ser Lys Glu Glu Leu Ile His Cys Asp Lys His Ala Gln Arg Thr
305                 310                 315                 320
Leu Arg Ala Glu Lys Val Phe Ser Ile Val Lys Asn Leu Tyr Glu Glu
                325                 330                 335
Leu
```

```
        <210> 961
        <211> 526
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 961
Ala Gln Gly Tyr Gly Ile Gly Thr Arg Lys Val Met Glu Asn Glu Ile
 1               5                  10                  15
Leu Leu Asn Ile Glu Ser Lys Glu Ile Arg Tyr Ala His Leu Lys Asn
            20                  25                  30
Gly Gln Leu Phe Asp Leu Thr Ile Glu Arg Lys Lys Val Arg Gln Leu
            35                  40                  45
Lys Gly Asn Ile Tyr Arg Gly Arg Val Thr Asn Ile Leu Arg Asn Ile
    50                  55                  60
Gln Ser Ala Phe Ile Asn Ile Asp Glu Arg Glu Asn Gly Phe Ile His
65                  70                  75                  80
Ile Ser Asp Ile Leu Glu Asn Ser Lys Lys Phe Glu Gln Met Phe Asp
                85                  90                  95
Met Asp Val Asp Ala Leu Pro Glu Glu Ala Ser Glu Ala Pro Leu Leu
            100                 105                 110
Ser Ser Glu Glu Ala Pro Ile Glu Glu Phe Leu Lys Leu Asp Ser Pro
    115                 120                 125
Val Leu Val Gln Val Val Lys Glu Pro Ile Gly Ser Lys Gly Ala Arg
    130                 135                 140
Leu Thr Ser Asn Ile Ser Ile Pro Gly Arg Tyr Leu Val Leu Leu Pro
145                 150                 155                 160
Asn Ser Pro His Arg Gly Val Ser Arg Lys Ile Glu Asp Pro His Met
                165                 170                 175
Arg Glu Gln Leu Lys Gln Leu Ile Arg Ser Phe Glu Met Pro Gln Asp
            180                 185                 190
Met Gly Leu Ile Cys Arg Thr Ala Ser Thr Thr Ala Ser Thr Glu Ala
            195                 200                 205
Leu Ile Asn Glu Ala His Asp Leu Leu Leu Thr Trp Lys Thr Ile Leu
    210                 215                 220
Glu Lys Phe Tyr Ser Thr Glu Gln Pro Cys Leu Leu Tyr Ser Glu Thr
225                 230                 235                 240
Asp Ile Leu Lys Lys Ala Val Ile Thr Cys Ile Asp Lys Asn Tyr Lys
            245                 250                 255
Arg Leu Leu Ile Asp Asp Tyr Ala Thr Tyr Gln Lys Cys Lys His Met
            260                 265                 270
Leu Lys Lys Tyr Ser Pro Asp Ala Ser Ile Lys Ile Glu Tyr Tyr Arg
        275                 280                 285
```

1160

```
Asp Ser Ile Pro Met Phe Glu Arg Phe Asn Ile Glu Lys Glu Ile Asp
    290                 295                 300
Lys Ala Thr Arg Arg Lys Ile Trp Leu Ser Ser Gly Gly Tyr Leu Phe
305                 310                 315                 320
Phe Asp Lys Thr Glu Ala Met His Thr Ile Asp Val Asn Ser Gly Arg
                325                 330                 335
Ser Thr Gln Leu Glu Ser Gly Val Glu Glu Thr Leu Val Gln Ile Asn
                340                 345                 350
Leu Glu Ala Ala Glu Glu Ile Ala Arg Gln Leu Arg Leu Arg Asn Val
            355                 360                 365
Gly Gly Leu Val Ile Ile Asp Phe Ile Asp Met Lys Ser Arg Lys Asn
    370                 375                 380
Gln Arg Arg Val Leu Glu Arg Leu Lys Glu His Met Lys Tyr Asp Ala
385                 390                 395                 400
Ala Arg Cys Thr Ile Leu Ser Met Ser Glu Phe Gly Leu Val Glu Met
                405                 410                 415
Thr Arg Gln Arg Asn Arg Glu Ser Leu Met Gln Thr Leu Phe Thr Leu
                420                 425                 430
Cys Pro Tyr Cys Ser Gly Asn Ala Ile Ile Lys Thr Pro Glu Ser Val
            435                 440                 445
Val Ile Glu Ile Glu Arg Asp Leu Lys Lys Val Ile Asn His Lys Glu
    450                 455                 460
His Ser His Leu Cys Leu Val Val His Pro Glu Ile Ala Ser Tyr Met
465                 470                 475                 480
Lys Gln Glu Asn Asp Asp Asn Glu Met Ile Asn Leu Ala Lys Gln Leu
                485                 490                 495
Lys Ala Lys Leu Gln Ile Asn Thr Ser Asp Ser Val His Leu Asn His
                500                 505                 510
Tyr Gln Phe Phe Ser Leu Ile Thr Gly Glu Ser Ile Asp Leu
    515                 520                 525
```

```
        <400> 962
Ser Leu Ser Leu Val Ser Tyr Leu Ser Asn Pro Gln Lys Ala Leu Val
1                   5                   10                  15
Leu Gly Ser Lys Gly Phe Ser Met Asp Cys Val Asp Asn Leu Lys Leu
                20                  25                  30
Tyr Ile Phe Arg Leu Lys Leu Pro Gly Asp Thr Glu Arg Ile Ser Tyr
            35                  40                  45
Ser Ile Ser Pro Glu Tyr Ile Arg Glu Lys Gly Glu Glu Glu Leu Leu
    50                  55                  60
Asn Ser Pro Ile Glu Val Glu Gly Ser Leu Gly Arg Ile Asp Ser Asp
65                  70                  75                  80
Gln Trp Ile Leu Ser Leu Ser Leu Lys Thr Gln Leu Gly Leu Cys Cys
                85                  90                  95
Pro Val Cys Asn Asn Phe Phe Ser His Ser Val Cys Leu Pro Asp Leu
            100                 105                 110
Gln Arg Val Ile Ser His Asp Glu Val Gly Ser Gly Val Phe Asp Cys
            115                 120                 125
Arg Pro Leu Ile Arg Gln Glu Leu Leu Leu Glu Ser Asp Cys Phe Glu
    130                 135                 140
Glu Cys Ser Gly Gln Gly Cys Pro Glu Arg Lys Asn Ile Leu Lys Phe
145                 150                 155                 160
Leu Glu Asp Arg Lys Lys His Glu Gly Asn Ser Pro Phe Glu Tyr Leu
                165                 170                 175
```

<210> 963
<211> 64
<212> PRT
<213> Chlamydia pneumoniae

<400> 963
Lys Val Arg Asn Met Ala Val Pro Arg Asn Arg His Ser Asn Ala Arg
1   5   10   15
Lys Asn Ile Arg Arg Ser His Asp Ala Lys Lys Ala Cys His Ala Ala
            20   25   30
Lys Cys Ser Asn Cys Lys His Ala Leu Leu Pro His Thr Ile Cys Pro
        35   40   45
Ser Cys Gly Phe Tyr Asn Gly Lys Ala Val Met Thr Val Glu Lys Lys
    50   55   60

<210> 964
<211> 325
<212> PRT
<213> Chlamydia pneumoniae

<400> 964
Ile Leu Ser Asp Phe Met Glu Val Gln Ile Gly Ile Asp Leu Met Gly
1   5   10   15
Gly Asp His Ser Pro Leu Val Val Trp Gln Val Leu Val Asp Val Leu
            20   25   30
Lys Ser Gln Ser Ser Thr Ile Pro Phe Ala Phe Thr Leu Phe Ala Ser
        35   40   45
Glu Glu Ile Arg Lys Gln Ile Gln Glu Glu Phe Ile Ser Asp Leu Pro
    50   55   60
Gln Glu Lys Phe Pro Lys Ile Ile Ser Ala Glu Asn Phe Val Ala Met
65   70   75   80
Glu Asp Ser Pro Leu Ala Ala Ile Arg Lys Lys Ser Ser Ser Met Ala
            85   90   95
Leu Gly Leu Asp Tyr Leu Gln Glu Asp Lys Leu Asp Ala Phe Ile Ser
            100   105   110
Thr Gly Asn Thr Gly Ala Leu Val Thr Leu Ala Arg Ala Lys Ile Pro
        115   120   125
Leu Phe Pro Ala Val Ser Arg Pro Ala Leu Leu Val Cys Val Pro Thr
    130   135   140
Met Arg Gly His Ala Val Ile Leu Asp Val Gly Ala Asn Ile Ser Val
145   150   155   160
Lys Pro Glu Glu Met Val Gly Phe Ala Arg Met Gly Leu Ala Tyr Arg
                165   170   175
Gln Cys Leu Gly Asp Ser Lys Ile Pro Thr Ile Gly Leu Leu Asn Ile
            180   185   190
Gly Ser Glu Glu Arg Lys Gly Thr Glu Ala His Arg Gln Thr Phe Arg
            195   200   205
Met Leu Arg Glu Thr Phe Gly Glu Ala Phe Leu Gly Asn Ile Glu Ser
    210   215   220
Gly Ala Val Phe Asp Gly Ala Ala Asp Ile Val Val Thr Asp Gly Phe
225   230   235   240
Thr Gly Asn Ile Phe Leu Lys Thr Ala Glu Gly Val Phe Glu Phe Leu
            245   250   255
Gln Arg Ile Leu Gly Asp Lys Leu Glu Ala Asp Ile Gln Arg Arg Leu
        260   265   270
Asp Tyr Thr Phe Tyr Pro Gly Ser Val Val Cys Gly Leu Ser Lys Leu
    275   280   285
Val Ile Lys Cys His Gly Lys Ala Cys Gly Ser Ser Leu Phe His Gly
    290   295   300
Ile Leu Gly Ser Ile Asn Leu Ala Gln Ala Arg Leu Cys Lys Arg Ile
305   310   315   320

1162

Leu Ser Asn Leu Ile
                325

          <210> 965
          <211> 1617
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 965
Thr Pro Leu Arg Phe Lys Val Ala Met Val Ala Lys Lys Thr Val Arg
 1   5   10   15
Ser Tyr Arg Ser Ser Phe Ser His Ser Val Ile Val Ala Ile Leu Ser
            20   25   30
Ala Gly Ile Ala Phe Glu Ala His Ser Leu His Ser Ser Glu Leu Asp
         35   40   45
Leu Gly Val Phe Asn Lys Gln Phe Glu Glu His Ser Ala His Val Glu
    50   55   60
Glu Ala Gln Thr Ser Val Leu Lys Gly Ser Asp Pro Val Asn Pro Ser
65   70   75   80
Gln Lys Glu Ser Glu Lys Val Leu Tyr Thr Gln Val Pro Leu Thr Gln
            85   90   95
Gly Ser Ser Gly Glu Ser Leu Asp Leu Ala Asp Ala Asn Phe Leu Glu
            100   105   110
His Phe Gln His Leu Phe Glu Glu Thr Thr Val Phe Gly Ile Asp Gln
        115   120   125
Lys Leu Val Trp Ser Asp Leu Asp Thr Arg Asn Phe Ser Gln Pro Thr
    130   135   140
Gln Glu Pro Asp Thr Ser Asn Ala Val Ser Glu Lys Ile Ser Ser Asp
145   150   155   160
Thr Lys Glu Asn Arg Lys Asp Leu Glu Thr Glu Asp Pro Ser Lys Lys
            165   170   175
Ser Gly Leu Lys Glu Val Ser Ser Asp Leu Pro Lys Ser Pro Glu Thr
            180   185   190
Ala Val Ala Ala Ile Ser Glu Asp Leu Glu Ile Ser Glu Asn Ile Ser
            195   200   205
Ala Arg Asp Pro Leu Gln Gly Leu Ala Phe Phe Tyr Lys Asn Thr Ser
    210   215   220
Ser Gln Ser Ile Ser Glu Lys Asp Ser Ser Phe Gln Gly Ile Ile Phe
225   230   235   240
Ser Gly Ser Gly Ala Asn Ser Gly Leu Gly Phe Glu Asn Leu Lys Ala
            245   250   255
Pro Lys Ser Gly Ala Ala Val Tyr Ser Asp Arg Asp Ile Val Phe Glu
            260   265   270
Asn Leu Val Lys Gly Leu Ser Phe Ile Ser Cys Glu Ser Leu Glu Asp
            275   280   285
Gly Ser Ala Ala Gly Val Asn Ile Val Val Thr His Cys Gly Asp Val
            290   295   300
Thr Leu Thr Asp Cys Ala Thr Gly Leu Asp Leu Glu Ala Leu Arg Leu
305   310   315   320
Val Lys Asp Phe Ser Arg Gly Gly Ala Val Phe Thr Ala Arg Asn His
            325   330   335
Glu Val Gln Asn Asn Leu Ala Gly Gly Ile Leu Ser Val Val Gly Asn
            340   345   350
Lys Gly Ala Ile Val Val Glu Lys Asn Ser Ala Glu Lys Ser Asn Gly
            355   360   365
Gly Ala Phe Ala Cys Gly Ser Phe Val Tyr Ser Asn Asn Glu Asn Thr
    370   375   380
Ala Leu Trp Lys Glu Asn Gln Ala Leu Ser Gly Gly Ala Ile Ser Ser
385   390   395   400
Ala Ser Asp Ile Asp Ile Gln Gly Asn Cys Ser Ala Ile Glu Phe Ser
            405   410   415

```
Gly Asn Gln Ser Leu Ile Ala Leu Gly Glu His Ile Gly Leu Thr Asp
        420                 425                 430
Phe Val Gly Gly Gly Ala Leu Ala Ala Gln Gly Thr Leu Thr Leu Arg
        435                 440                 445
Asn Asn Ala Val Val Gln Cys Val Lys Asn Thr Ser Lys Thr His Gly
    450                 455                 460
Gly Ala Ile Leu Ala Gly Thr Val Asp Leu Asn Glu Thr Ile Ser Glu
465                 470                 475                 480
Val Ala Phe Lys Gln Asn Thr Ala Ala Leu Thr Gly Gly Ala Leu Ser
            485                 490                 495
Ala Asn Asp Lys Val Ile Ile Ala Asn Asn Phe Gly Glu Ile Leu Phe
            500                 505                 510
Glu Gln Asn Glu Val Arg Asn His Gly Gly Ala Ile Tyr Cys Gly Cys
        515                 520                 525
Arg Ser Asn Pro Lys Leu Glu Gln Lys Asp Ser Gly Glu Asn Ile Asn
    530                 535                 540
Ile Ile Gly Asn Ser Gly Ala Ile Thr Phe Leu Lys Asn Lys Ala Ser
545                 550                 555                 560
Val Leu Glu Val Met Thr Gln Ala Glu Asp Tyr Ala Gly Gly Gly Ala
            565                 570                 575
Leu Trp Gly His Asn Val Leu Leu Asp Ser Asn Ser Gly Asn Ile Gln
            580                 585                 590
Phe Ile Gly Asn Ile Gly Gly Ser Thr Phe Trp Ile Gly Glu Tyr Val
        595                 600                 605
Gly Gly Gly Ala Ile Leu Ser Thr Asp Arg Val Thr Ile Ser Asn Asn
    610                 615                 620
Ser Gly Asp Val Val Phe Lys Gly Asn Lys Gly Gln Cys Leu Ala Gln
625                 630                 635                 640
Lys Tyr Val Ala Pro Gln Glu Thr Ala Pro Val Glu Ser Asp Ala Ser
            645                 650                 655
Ser Thr Asn Lys Asp Glu Lys Ser Leu Asn Ala Cys Ser His Gly Asp
            660                 665                 670
His Tyr Pro Pro Lys Thr Val Glu Glu Glu Val Pro Pro Ser Leu Leu
        675                 680                 685
Glu Glu His Pro Val Val Ser Ser Thr Asp Ile Arg Gly Gly Gly Ala
    690                 695                 700
Ile Leu Ala Gln His Ile Phe Ile Thr Asp Asn Thr Gly Asn Leu Arg
705                 710                 715                 720
Phe Ser Gly Asn Leu Gly Gly Gly Glu Glu Ser Ser Thr Val Gly Asp
            725                 730                 735
Leu Ala Ile Val Gly Gly Gly Ala Leu Leu Ser Thr Asn Glu Val Asn
            740                 745                 750
Val Cys Ser Asn Gln Asn Val Val Phe Ser Asp Asn Val Thr Ser Asn
        755                 760                 765
Gly Cys Asp Ser Gly Gly Ala Ile Leu Ala Lys Lys Val Asp Ile Ser
    770                 775                 780
Ala Asn His Ser Val Glu Phe Val Ser Asn Gly Ser Gly Lys Phe Gly
785                 790                 795                 800
Gly Ala Val Cys Ala Leu Asn Glu Ser Val Asn Ile Thr Asp Asn Gly
            805                 810                 815
Ser Ala Val Ser Phe Ser Lys Asn Arg Thr Arg Leu Gly Gly Ala Gly
            820                 825                 830
Val Ala Ala Pro Gln Gly Ser Val Thr Ile Cys Gly Asn Gln Gly Asn
        835                 840                 845
Ile Ala Phe Lys Glu Asn Phe Val Phe Gly Ser Glu Asn Gln Arg Ser
    850                 855                 860
Gly Gly Gly Ala Ile Ile Ala Asn Ser Ser Val Asn Ile Gln Asp Asn
865                 870                 875                 880
Ala Gly Asp Ile Leu Phe Val Ser Asn Ser Thr Gly Ser Tyr Gly Gly
            885                 890                 895
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Ala Ile Phe Val Gly Ser Leu Val Ala Ser Glu Gly Ser Asn Pro Arg
        900                 905                 910
Thr Leu Thr Ile Thr Gly Asn Ser Gly Asp Ile Leu Phe Ala Lys Asn
        915                 920                 925
Ser Thr Gln Thr Ala Ala Ser Leu Ser Glu Lys Asp Ser Phe Gly Gly
        930                 935                 940
Gly Ala Ile Tyr Thr Gln Asn Leu Lys Ile Val Lys Asn Ala Gly Asn
945                 950                 955                 960
Val Ser Phe Tyr Gly Asn Arg Ala Pro Ser Gly Ala Gly Val Gln Ile
            965                 970                 975
Ala Asp Gly Gly Thr Val Cys Leu Glu Ala Phe Gly Gly Asp Ile Leu
        980                 985                 990
Phe Glu Gly Asn Ile Asn Phe Asp Gly Ser Phe Asn Ala Ile His Leu
        995                 1000                1005
Cys Gly Asn Asp Ser Lys Ile Val Glu Leu Ser Ala Val Gln Asp Lys
        1010                1015                1020
Asn Ile Ile Phe Gln Asp Ala Ile Thr Tyr Glu Glu Asn Thr Ile Arg
1025                1030                1035                1040
Gly Leu Pro Asp Lys Asp Val Ser Pro Leu Ser Ala Pro Ser Leu Ile
            1045                1050                1055
Phe Asn Ser Lys Pro Gln Asp Asp Ser Ala Gln His His Glu Gly Thr
            1060                1065                1070
Ile Arg Phe Ser Arg Gly Val Ser Lys Ile Pro Gln Ile Ala Ala Ile
            1075                1080                1085
Gln Glu Gly Thr Leu Ala Leu Ser Gln Asn Ala Glu Leu Trp Leu Ala
        1090                1095                1100
Gly Leu Lys Gln Glu Thr Gly Ser Ser Ile Val Leu Ser Ala Gly Ser
1105                1110                1115                1120
Ile Leu Arg Ile Phe Asp Ser Gln Val Asp Ser Ser Ala Pro Leu Pro
            1125                1130                1135
Thr Glu Asn Lys Glu Glu Thr Leu Val Ser Ala Gly Val Gln Ile Asn
            1140                1145                1150
Met Ser Ser Pro Thr Pro Asn Lys Asp Lys Ala Val Asp Thr Pro Val
            1155                1160                1165
Leu Ala Asp Ile Ile Ser Ile Thr Val Asp Leu Ser Ser Phe Val Pro
        1170                1175                1180
Glu Gln Asp Gly Thr Leu Pro Leu Pro Pro Glu Ile Ile Ile Pro Lys
1185                1190                1195                1200
Gly Thr Lys Leu His Ser Asn Ala Ile Asp Leu Lys Ile Ile Asp Pro
            1205                1210                1215
Thr Asn Val Gly Tyr Glu Asn His Ala Leu Leu Ser Ser His Lys Asp
            1220                1225                1230
Ile Pro Leu Ile Ser Leu Lys Thr Ala Glu Gly Met Thr Gly Thr Pro
        1235                1240                1245
Thr Ala Asp Ala Ser Leu Ser Asn Ile Lys Ile Asp Val Ser Leu Pro
        1250                1255                1260
Ser Ile Thr Pro Ala Thr Tyr Gly His Thr Gly Val Trp Ser Glu Ser
1265                1270                1275                1280
Lys Met Glu Asp Gly Arg Leu Val Val Gly Trp Gln Pro Thr Gly Tyr
            1285                1290                1295
Lys Leu Asn Pro Glu Lys Gln Gly Ala Leu Val Leu Asn Asn Leu Trp
            1300                1305                1310
Ser His Tyr Thr Asp Leu Arg Ala Leu Lys Gln Glu Ile Phe Ala His
        1315                1320                1325
His Thr Ile Ala Gln Arg Met Glu Leu Asp Phe Ser Thr Asn Val Trp
        1330                1335                1340
Gly Ser Gly Leu Gly Val Val Glu Asp Cys Gln Asn Ile Gly Glu Phe
1345                1350                1355                1360
Asp Gly Phe Lys His His Leu Thr Gly Tyr Ala Leu Gly Leu Asp Thr
            1365                1370                1375
```

Gln Leu Val Glu Asp Phe Leu Ile Gly Gly Cys Phe Ser Gln Phe Phe
            1380   1385   1390
Gly Lys Thr Glu Ser Gln Ser Tyr Lys Ala Lys Asn Asp Val Lys Ser
            1395   1400   1405
Tyr Met Gly Ala Ala Tyr Ala Gly Ile Leu Ala Gly Pro Trp Leu Ile
            1410   1415   1420
Lys Gly Ala Phe Val Tyr Gly Asn Ile Asn Asn Asp Leu Thr Thr Asp
1425   1430   1435   1440
Tyr Gly Thr Leu Gly Ile Ser Thr Gly Ser Trp Ile Gly Lys Gly Phe
            1445   1450   1455
Ile Ala Gly Thr Ser Ile Asp Tyr Arg Tyr Ile Val Asn Pro Arg Arg
            1460   1465   1470
Phe Ile Ser Ala Ile Val Ser Thr Val Val Pro Phe Val Glu Ala Glu
            1475   1480   1485
Tyr Val Arg Ile Asp Leu Pro Glu Ile Ser Glu Gln Gly Lys Glu Val
            1490   1495   1500
Arg Thr Phe Gln Lys Thr Arg Phe Glu Asn Val Ala Ile Pro Phe Gly
1505   1510   1515   1520
Phe Ala Leu Glu His Ala Tyr Ser Arg Gly Ser Arg Ala Glu Val Asn
            1525   1530   1535
Ser Val Gln Leu Ala Tyr Val Phe Asp Val Tyr Arg Lys Gly Pro Val
            1540   1545   1550
Ser Leu Ile Thr Leu Lys Asp Ala Ala Tyr Ser Trp Lys Ser Tyr Gly
            1555   1560   1565
Val Asp Ile Pro Cys Lys Ala Trp Lys Ala Arg Leu Ser Asn Asn Thr
            1570   1575   1580
Glu Trp Asn Ser Tyr Leu Ser Thr Tyr Leu Ala Phe Asn Tyr Glu Trp
1585   1590   1595   1600
Arg Glu Asp Leu Ile Ala Tyr Asp Phe Asn Gly Gly Ile Arg Ile Ile
            1605   1610   1615
Phe

        <210> 966
        <211> 504
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 966
Gln Ser Ile Leu Glu Ser Ile Ile Lys Tyr Phe Tyr Leu Ile His Asn
1   5   10   15
Ser Lys Met His Met Ser Asn Pro Ile Ser Leu Phe Ser Pro Ala Glu
            20   25   30
Leu Ile Ala Lys Tyr Asn Leu Ile Pro Lys Thr Ser Pro Ile Tyr Pro
            35   40   45
Arg Arg Thr Glu Leu Ile Ile Leu Glu Glu Asn Ala Cys Gln Thr Arg
            50   55   60
Leu Thr Asn Val Ala Gln Val Leu His Pro Ser Ser Leu Phe Ser Met
65   70   75   80
Ser Lys Lys Ile Leu Asn Pro Cys Gly Cys Ser Gly Gly Pro Leu Cys
            85   90   95
Trp Val Ile Leu Asn Ile Leu Ala Phe Ile Ile Thr Ser Val Leu Phe
            100   105   110
Ile Ile Leu Leu Pro Val Asn Leu Ile Val Ala Gly Leu Arg Leu Phe
            115   120   125
Met Pro Leu Pro Pro Lys Lys Ile Val Glu Asp Leu Ser Glu Pro Thr
            130   135   140
Thr Glu Glu Thr Asn Glu Val Ile Gln Pro Phe Ile Phe Ala Leu Gln
145   150   155   160
Ala Leu Leu Phe Glu Asp Asn Lys Leu Arg Ser Phe Lys Ile Val Glu
            165   170   175

1166

```
Gln Ser Val Gly Lys Ala Pro Leu Pro Asn Pro Phe Leu Asn Arg Leu
            180                 185                 190
Val Ala Ile Ser Pro Gln Glu Ser Gln Glu Ala Met Arg Lys Ile Pro
            195                 200                 205
Asp Leu Cys Ser Gln Leu Lys Lys Val Leu Lys Ser Leu Gly Val Leu
            210                 215                 220
Thr Pro Glu Trp Lys His Met Leu Lys Tyr Phe Glu Gly Leu Lys Asn
225                 230                 235                 240
Glu His Asp Ser Asn Pro Asp Lys Lys Thr Phe Pro Ile Leu Ile Lys
            245                 250                 ·255
Leu Leu Ile Glu Ala Leu Thr Gly Lys Ser Ser Leu Pro Lys Thr Pro
            260                 265                 270
Ser Thr Lys Glu Lys Met Gln Ala Ala Leu Phe Ile Ala Ser Ser Cys
            275                 280                 285
Lys Thr Cys Lys Pro Thr Trp Gly Glu Val Ile Thr Arg Ser Leu Asn
            290                 295                 300
Arg Leu Tyr Ser Ile Ala Asn Glu Gly Asp Asn Gln Leu Leu Ile Trp
305                 310                 315                 320
Val Gln Glu Phe Lys Glu Arg Glu Leu Met Ser Ile Gln Asp Gly Asp
            325                 330                 335
Asp Ala Glu Glu Tyr Arg Phe Ala Ala Gln Gln His Gly Glu Arg Tyr
            340                 345                 350
Thr Glu Ala Ile Glu Gln Val Leu Arg Asn Glu Ser Ala Ala Lys Leu
            355                 360                 365
Gln Trp His Val Ile Asn Thr Met Lys Phe Phe His Gly Lys Asn Leu
370                 375                 380
Gly Leu Val Thr Glu His Leu Gln Asp Thr Leu Gly Ala Leu Thr Leu
385                 390                 395                 400
Arg Gln Thr Thr Val Asp Thr His Gln Gly Arg Glu Asp Ala Asp Leu
            405                 410                 415
Ser Ala Ala Leu Phe Leu Asn Lys Tyr Leu Asn Ser Gly Asn Gln Leu
            420                 425                 430
Val Asn Ser Val Phe Lys Ser Met Gln Lys Ala Asp Pro Glu Thr Lys
            435                 440                 445
Ala Leu Ile Arg Glu Phe Ala Leu Asp Ile Leu Tyr Ala Ser Leu Arg
450                 455                 460
Leu Pro Gln Thr Ser Ala His Thr Glu Val Phe Ser Thr Leu Leu Met
465                 470                 475                 480
Asp Pro Glu Thr Tyr Glu Pro Asn Lys Ala Cys Ile Ala Tyr Leu Leu
            485                 490                 495
Tyr Val Leu Lys Ile Ile Glu Leu
            500

       <210> 967
       <211> 615
       <212> PRT
       <213> Chlamydia pneumoniae

       <400> 967
Lys Gly Phe Ser Phe Ser Lys Val Gly Leu Asn Met Ile Pro Ser Gly
1                 5                   10                  15
Leu Val Tyr Leu Leu Tyr Pro Leu Gly Phe Leu Ala Ser Leu Phe Phe
            20                  25                  30
Gly Ser Ala Phe Ser Ile Gln Trp Trp Leu Ser Lys Lys Arg Lys Glu
            35                  40                  45
Val Tyr Ala Pro Arg Ser Phe Trp Ile Leu Ser Ser Ile Gly Ala Thr
            50                  55                  60
Leu Met Ile Val His Gly Thr Ile Gln Ser Gln Phe Pro Val Thr Val
65                  70                  75                  80
Leu His Val Ile Asn Leu Ile Ile Tyr Leu Arg Asn Leu Asn Ile Thr
            85                  90                  95
```

1167

```
Ser Ser Arg Pro Ile Ser Phe Arg Ala Thr Leu Val Leu Met Ala Leu
        100                 105                 110
Ser Val Val Phe Val Thr Leu Pro Phe Leu Tyr Val Asn Met Glu Trp
        115                 120                 125
Met Ala Ser Pro Asn Ile Phe His Leu Pro Leu Pro Pro Ala Gln Leu
    130                 135                 140
Ser Trp His Leu Ile Gly Cys Leu Gly Leu Ala Ile Phe Ser Gly Arg
145                 150                 155                 160
Phe Leu Ile Gln Trp Phe Tyr Ile Glu Ser Asn Asn Thr Lys Asp Phe
                165                 170                 175
Pro Leu Leu Phe Trp Lys Ile Gly Leu Leu Gly Gly Leu Leu Ala Leu
            180                 185                 190
Val Tyr Phe Ile Arg Ile Gly Asp Pro Ile Asn Ile Leu Cys Tyr Gly
        195                 200                 205
Cys Gly Leu Phe Pro Ser Ile Ala Asn Leu Arg Leu Phe Tyr Lys Glu
    210                 215                 220
Gln Arg Ser Thr Pro Tyr Leu Asp Thr His Cys Phe Leu Ser Ala Gly
225                 230                 235                 240
Glu Ala Ser Gly Asp Ile Leu Gly Gly Lys Leu Ile Gln Ser Ile Lys
                245                 250                 255
Ser Leu Tyr Pro Asn Ile Arg Phe Trp Gly Val Gly Gly Pro Ala Met
            260                 265                 270
Arg Gln Glu Gly Leu Gln Pro Ile Leu Asn Met Glu Glu Phe Gln Val
        275                 280                 285
Ser Gly Phe Ala Glu Val Leu Gly Ser Leu Phe Arg Leu Tyr Arg Asn
    290                 295                 300
Tyr Arg Lys Ile Leu Lys Thr Ile Leu Lys His Lys Pro Ala Thr Leu
305                 310                 315                 320
Ile Phe Ile Asp Phe Pro Asp Phe His Leu Leu Leu Ile Lys Lys Leu
            325                 330                 335
Arg Lys His Gly Tyr Arg Gly Lys Ile Ile His Tyr Val Cys Pro Ser
            340                 345                 350
Ile Trp Ala Trp Arg Pro Lys Arg Lys Arg Ile Leu Glu Gln His Leu
    355                 360                 365
Asp Met Leu Leu Leu Ile Leu Pro Phe Glu Glu Gly Leu Phe Lys Asn
    370                 375                 380
Thr Ser Leu Glu Thr Val Tyr Leu Gly His Pro Leu Val Glu Glu Ile
385                 390                 395                 400
Ser Asp Tyr Lys Glu Gln Ala Ser Trp Lys Glu Lys Phe Leu Asn Ser
            405                 410                 415
Asp Arg Pro Ile Val Ala Ala Phe Pro Gly Ser Arg Arg Gly Asp Ile
            420                 425                 430
Ser Arg Asn Leu Arg Ile Gln Val Gln Ala Phe Leu Asn Ser Ser Leu
    435                 440                 445
Ser Gln Thr His Gln Phe Val Val Ser Ser Ser Ser Ala Lys Tyr Asp
    450                 455                 460
Glu Ile Ile Glu Asp Thr Leu Lys Ala Glu Gly Cys Gln His Ser Gln
465                 470                 475                 480
Ile Ile Pro Met Asn Phe Arg Tyr Glu Leu Met Arg Ser Cys Asp Cys
            485                 490                 495
Ala Leu Ala Lys Cys Gly Thr Ile Val Leu Glu Thr Ala Leu Asn Gln
        500                 505                 510
Thr Pro Thr Ile Val Met Cys Arg Leu Arg Pro Phe Asp Thr Phe Leu
    515                 520                 525
Ala Lys Tyr Ile Phe Lys Ile Leu Leu Pro Ala Tyr Ser Leu Pro Asn
    530                 535                 540
Ile Ile Met Asn Ser Val Ile Phe Pro Glu Phe Ile Gly Gly Lys Lys
545                 550                 555                 560
Asp Phe His Pro Glu Glu Ile Ala Thr Ala Leu Asp Leu Leu Asn Gln
            565                 570                 575
```

```
His Gly Ser Lys Glu Lys Gln Lys Glu Asp Cys Arg Lys Leu Cys Lys
             580                 585                 590
Val Met Thr Thr Gly Gln Ile Ala Ser Glu Glu Phe Leu Lys Arg Ile
         595                 600                 605
Phe Asp Thr Leu Pro Ala Val
    610                 615
```

<210> 968
<211> 436
<212> PRT
<213> Chlamydia pneumoniae

<400> 968
```
Leu Leu Ile Thr Ile Ile Met Val Cys Glu Asn Asn Ile Leu Ser Gly
  1               5                  10                  15
Arg Gly Leu Glu Leu Leu Lys Lys Lys Ser Asn Ile Thr Leu Thr Pro
             20                  25                  30
Thr Ile Tyr Ser Val Ser Asn His Asn Ile Lys Leu Lys Asp Phe Ser
         35                  40                  45
Pro His Ala Leu Ser Val Ile Lys Thr Leu Arg Lys Ala Gly Tyr Ile
     50                  55                  60
Ala Tyr Ile Val Gly Gly Cys Ile Arg Asp Leu Leu Leu Asn Thr Thr
 65                  70                  75                  80
Pro Lys Asp Phe Asp Ile Ser Thr Ser Ala Lys Pro Glu Glu Ile Lys
             85                  90                  95
Ala Ile Phe Lys Asn Cys Ile Leu Val Gly Lys Arg Phe Arg Leu Ala
             100                 105                 110
His Ile Arg Phe Ser Lys Gln Ile Ile Glu Val Ser Thr Phe Arg Ser
         115                 120                 125
Gly Ser Thr Asp Glu Asp Val Leu Ile Thr Lys Asp Asn Leu Trp Gly
     130                 135                 140
Thr Pro Glu Glu Asp Val Leu Arg Arg Asp Phe Thr Ile Asn Gly Leu
145                 150                 155                 160
Phe Tyr Asp Pro Glu His Glu Glu Ile Ile Asp Tyr Thr Gly Gly Val
             165                 170                 175
Asn Asp Leu Arg Asn Arg Tyr Leu Arg Thr Ile Gly Asp Pro Phe Thr
             180                 185                 190
Arg Phe Lys Gln Asp Pro Val Arg Met Leu Arg Leu Leu Lys Ile Leu
             195                 200                 205
Ser Arg Ser Pro Phe Thr Val Glu Thr Gln Thr Gln Glu Ala Leu Ile
     210                 215                 220
Ala Cys Arg Gln Glu Leu Ile Lys Ser Ser Gln Ala Arg Val Phe Glu
225                 230                 235                 240
Glu Leu Ile Lys Met Leu Asn Ser Gly Ala Ala Lys Asn Phe Phe Gln
             245                 250                 255
Leu Leu Ile Glu Asn His Leu Leu Glu Ile Leu Phe Pro Tyr Met Asp
             260                 265                 270
Lys Ala Phe Arg Leu Asn Arg Ala Leu Glu Glu Gln Thr Ala Thr Tyr
         275                 280                 285
Leu Lys Ala Leu Asp Asp Lys Ile Leu Lys Lys Glu Ala Glu Tyr Asp
     290                 295                 300
Arg His Gln Leu Met Ala Ile Phe Leu Phe Pro Leu Val Asn Phe Asn
305                 310                 315                 320
Val Arg Tyr Lys His Gln Lys His Pro Tyr Leu Ser Leu Thr Ser Val
             325                 330                 335
Phe Asp Tyr Ile Lys Asn Phe Leu Glu Gln Phe Phe Ala Asp Ser Phe
             340                 345                 350
Thr Ser Cys Ser Lys Lys Asn Phe Ile Leu Thr Ala Leu Ile Leu Gln
     355                 360                 365
Met Gln Tyr Arg Leu Thr Pro Leu Ile Pro Thr Lys Lys Ala Leu Phe
370                 375                 380
```

Phe Asn Lys Lys Leu Leu His His Thr Arg Phe Leu Glu Ala Leu Ser
385   390   395   400
Leu Leu Glu Ile Arg Ser Ile Val Tyr Pro Lys Leu Asp Lys Val Tyr
            405   410   415
Val Ala Trp Ile Arg His His Gln Thr Leu Lys Cys Lys Lys Asp Ser
            420   425   430
His Ser Gln Lys
        435

        <210> 969
        <211> 485
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 969
Phe Thr Ala Tyr Lys Phe Ala Phe Ile Cys Ala Cys Arg Ser Glu Lys
  1   5   10   15
Ile Arg Arg Ile Gly Ile Asp Phe Arg Arg Asn Met Gln Gln Ser Val
            20   25   30
Arg Lys Leu Phe Gly Thr Asp Gly Val Arg Gly Arg Ala Asn Phe Glu
        35   40   45
Pro Met Thr Val Glu Thr Thr Val Leu Leu Gly Lys Ala Val Ala Arg
    50   55   60
Val Leu Arg Glu Gly Arg Ser Gly Lys His Arg Val Val Val Gly Lys
65   70   75   80
Asp Thr Arg Leu Ser Gly Tyr Met Phe Glu Asn Ala Leu Ile Ala Gly
            85   90   95
Leu Asn Ser Met Gly Ile Glu Thr Leu Val Leu Gly Pro Ile Pro Thr
            100   105   110
Pro Gly Val Ala Phe Ile Thr Arg Ala Tyr Arg Ala Asp Ala Gly Ile
        115   120   125
Met Ile Ser Ala Ser His Asn Pro Tyr Arg Asp Asn Gly Ile Lys Ile
    130   135   140
Phe Ser Leu Glu Gly Phe Lys Ile Ser Asp Val Leu Glu Gln Arg Ile
145   150   155   160
Glu Thr Met Val Ser Glu Ala Asp Phe Gly Pro Leu Pro Glu Asp His
            165   170   175
Ala Val Gly Lys Asn Lys Arg Val Ile Asp Ala Met Gly Arg Tyr Val
            180   185   190
Glu Phe Val Lys Ala Thr Phe Pro Lys Gly Arg Thr Leu Lys Gly Leu
        195   200   205
Lys Ile Val Leu Asp Cys Ala His Gly Ala Ser Tyr Lys Val Ala Pro
    210   215   220
Ser Val Phe Glu Glu Leu Asp Ala Glu Val Ile Cys Tyr Gly Cys Glu
225   230   235   240
Pro Thr Gly Ile Asn Ile Asn Glu His Cys Gly Ala Leu Phe Pro Gln
            245   250   255
Val Ile Gln Lys Ala Val Ile Glu His Gln Ala His Leu Gly Ile Ala
            260   265   270
Leu Asp Gly Asp Gly Asp Arg Ile Ile Met Val Asp Glu Lys Gly His
        275   280   285
Ile Val Asp Gly Asp Met Ile Leu Ser Ile Cys Ala Gly Asp Leu Lys
    290   295   300
Lys Arg Ser Ala Leu Pro His Asn Arg Val Val Ala Thr Ile Met Thr
305   310   315   320
Asn Phe Gly Val Leu Lys Tyr Leu Glu Gly Leu Gly Leu Gln Val Phe
            325   330   335
Thr Ser Pro Val Gly Asp Arg His Val Leu His Ala Met Leu Glu His
            340   345   350
Glu Val Thr Leu Gly Gly Glu Gln Ser Gly His Met Ile Phe Leu Asp
        355   360   365

                        1170

```
Tyr Asn Thr Thr Gly Asp Gly Ile Val Ser Ala Leu Gln Val Leu Arg
    370             375             380
Ile Met Ile Glu Ser Glu Ser Met Leu Ser Asp Leu Thr Ala Pro Ile
385             390             395             400
Val Lys Ser Pro Gln Thr Leu Ile Asn Val Ala Val Arg Glu Lys Ile
            405             410             415
Pro Leu Glu Thr Ile Pro Leu Ile Glu Arg Thr Leu Arg Asp Val Gln
            420             425             430
Asp Ala Leu Gly Pro Ser Gly Arg Ile Leu Leu Arg Tyr Ser Gly Thr
            435             440             445
Glu Asn Ile Cys Arg Val Met Val Glu Gly His Lys Lys His Gln Val
    450             455             460
Asp Cys Leu Ala Lys Ala Leu Ala Asp Val Ile Asp Ala Glu Leu Gly
465             470             475             480
Thr Gly Ser Arg Glu
            485


        <210> 970
        <211> 611
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 970
Asp Arg Met Cys Gly Ile Phe Gly Tyr Leu Gly Asn Gln Asp Gly Val
1               5               10              15
Ser Ile Val Leu Glu Gly Leu Ala Lys Leu Glu Tyr Arg Gly Tyr Asp
            20              25              30
Ser Ala Gly Leu Ala Ala Val Val Glu Gln Glu Leu Phe Ile Arg Lys
            35              40              45
Thr Val Gly Arg Val Gln Glu Leu Ser Asn Leu Phe Gln Glu Arg Glu
    50              55              60
Ile Pro Thr Ala Ser Val Ile Gly His Thr Arg Trp Ala Thr His Gly
65              70              75              80
Val Pro Thr Glu Ile Asn Ala His Pro His Val Asp Glu Gly Arg Ser
            85              90              95
Cys Ala Val Val His Asn Gly Ile Ile Glu Asn Phe Lys Glu Leu Arg
            100             105             110
Arg Glu Leu Thr Ala Gln Gly Ile Ser Phe Ala Ser Asp Thr Asp Ser
    115             120             125
Glu Ile Ile Val Gln Leu Phe Ser Leu Tyr Tyr Gln Glu Ser Gln Asp
    130             135             140
Leu Val Phe Ser Phe Cys Gln Thr Leu Ala Gln Leu Arg Gly Ser Val
145             150             155             160
Ala Cys Ala Leu Ile His Lys Asp His Pro His Thr Ile Leu Cys Ala
            165             170             175
Ser Gln Glu Ser Pro Leu Ile Leu Gly Leu Gly Lys Glu Glu Thr Phe
            180             185             190
Ile Ala Ser Asp Ser Arg Ala Phe Phe Lys Tyr Thr Arg His Ser Gln
            195             200             205
Ala Leu Ala Ser Gly Glu Phe Ala Ile Val Ser Gln Gly Lys Glu Pro
    210             215             220
Glu Val Tyr Asn Leu Glu Leu Lys Lys Ile His Lys Asp Val Arg Gln
225             230             235             240
Ile Thr Cys Ser Glu Asp Ala Ser Asp Lys Ser Gly Tyr Gly Tyr Tyr
            245             250             255
Met Leu Lys Glu Ile Tyr Asp Gln Pro Glu Val Leu Glu Gly Leu Ile
            260             265             270
Gln Lys His Met Asp Glu Glu Gly His Ile Leu Ser Glu Phe Leu Ser
    275             280             285
Asp Val Pro Ile Lys Ser Phe Lys Glu Ile Thr Ile Val Ala Cys Gly
    290             295             300
```

                                    1171

```
Ser Ser Tyr His Ala Gly Tyr Leu Ala Lys Tyr Ile Ile Glu Ser Leu
305                 310                 315                 320
Val Ser Thr Pro Val His Ile Glu Val Ala Ser Glu Phe Arg Tyr Arg
            325                 330                 335
Arg Pro Tyr Ile Gly Lys Asp Thr Leu Gly Ile Leu Ile Ser Gln Ser
        340                 345                 350
Gly Glu Thr Ala Asp Thr Leu Ala Ala Leu Lys Glu Leu Arg Arg Arg
        355                 360                 365
Asn Ile Ala Tyr Leu Leu Gly Ile Cys Asn Val Pro Glu Ser Ala Ile
    370                 375                 380
Ala Leu Gly Val Asp His Cys Leu Phe Leu Glu Ala Gly Val Glu Ile
385                 390                 395                 400
Gly Val Ala Thr Thr Lys Ala Phe Thr Ser Gln Leu Leu Leu Leu Val
            405                 410                 415
Phe Leu Gly Leu Lys Leu Ala Asn Val His Gly Ala Leu Thr His Ala
            420                 425                 430
Glu Gln Cys Ser Phe Gly Gln Gly Leu Gln Ser Leu Pro Asp Leu Cys
        435                 440                 445
Gln Lys Leu Leu Ala Asn Glu Ser Leu His Ser Trp Ala Gln Pro Tyr
    450                 455                 460
Ser Tyr Glu Asp Lys Phe Leu Phe Leu Gly Arg Arg Leu Met Tyr Pro
465                 470                 475                 480
Val Val Met Glu Ala Ala Leu Lys Leu Lys Glu Ile Ala Tyr Ile Glu
            485                 490                 495
Ala Asn Ala Tyr Pro Gly Gly Glu Met Lys His Gly Pro Ile Ala Leu
        500                 505                 510
Ile Ser Lys Gly Thr Pro Val Ile Ala Phe Cys Gly Asp Asp Ile Val
    515                 520                 525
Tyr Glu Lys Met Ile Gly Asn Met Met Glu Val Lys Ala Arg His Ala
    530                 535                 540
His Val Ile Ala Ile Ala Pro Glu Ser Arg Glu Asp Ile Ala Ala Val
545                 550                 555                 560
Ser Asp Gln Gln Ile Phe Val Pro Asp Cys His Phe Leu Ala Ala Pro
            565                 570                 575
Val Leu Tyr Thr Ile Val Gly Gln Val Met Ala Tyr Ala Met Ala Leu
        580                 585                 590
Ala Lys Gly Met Glu Ile Asp Cys Pro Arg Asn Leu Ala Lys Ser Val
    595                 600                 605
Thr Val Glu
    610


    <210> 971
    <211> 399
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 971
Val Tyr Val Met Ser Asn Lys Val Leu Gly Gly Ser Leu Leu Ile Ala
1               5                   10                  15
Gly Ser Ala Ile Gly Ala Gly Val Leu Ala Val Pro Val Leu Thr Ala
            20                  25                  30
Lys Gly Gly Phe Phe Pro Ala Thr Phe Leu Tyr Ile Val Ser Trp Leu
        35                  40                  45
Phe Ser Met Ala Ser Gly Leu Cys Leu Leu Glu Val Met Thr Trp Met
    50                  55                  60
Lys Glu Ser Lys Asn Pro Val Asn Met Leu Ser Met Ala Glu Ser Ile
65              70                  75                  80
Leu Gly His Val Gly Lys Ile Ser Ile Cys Leu Val Tyr Leu Phe Leu
            85                  90                  95
Phe Tyr Ser Leu Leu Ile Ala Tyr Phe Cys Glu Gly Gly Asn Ile Leu
        100                 105                 110
```

1172

```
Cys Arg Val Phe Asn Cys Gln Asn Leu Gly Ile Ser Trp Ile Arg His
        115                 120                 125
Leu Gly Pro Leu Gly Phe Ala Ile Leu Met Gly Pro Ile Ile Met Ala
    130                 135                 140
Gly Thr Lys Val Ile Asp Tyr Cys Asn Arg Phe Phe Met Phe Gly Leu
145                 150                 155                 160
Thr Val Ala Phe Gly Ile Phe Cys Ala Leu Gly Phe Leu Lys Ile Gln
            165                 170                 175
Pro Ser Phe Leu Val Arg Ser Ser Trp Leu Thr Thr Ile Asn Ala Phe
            180                 185                 190
Pro Val Phe Phe Leu Ala Phe Gly Phe Gln Ser Ile Ile Pro Thr Leu
    195                 200                 205
Tyr Tyr Tyr Met Asp Lys Lys Val Gly Asp Val Lys Lys Ala Ile Leu
    210                 215                 220
Ile Gly Thr Leu Ile Pro Leu Val Leu Tyr Val Leu Trp Glu Val Val
225                 230                 235                 240
Val Leu Gly Ala Val Ser Leu Pro Ile Leu Ser Gln Ala Lys Ile Gly
            245                 250                 255
Gly Tyr Thr Ala Val Glu Ala Leu Lys Gln Ala His Arg Ser Trp Ala
            260                 265                 270
Phe Tyr Ile Ala Gly Glu Leu Phe Gly Phe Phe Ala Leu Val Ser Ser
        275                 280                 285
Phe Val Gly Val Ala Leu Gly Val Met Asp Phe Leu Ala Asp Gly Leu
    290                 295                 300
Lys Trp Asn Lys Lys Ser His Pro Phe Ser Ile Phe Phe Leu Thr Phe
305                 310                 315                 320
Ile Ile Pro Leu Ala Trp Ala Val Cys Tyr Pro Glu Ile Val Leu Thr
            325                 330                 335
Cys Leu Lys Tyr Ala Gly Gly Phe Gly Ala Ala Val Ile Ile Gly Val
        340                 345                 350
Phe Pro Thr Leu Ile Val Trp Lys Gly Arg Tyr Gly Lys Gln His His
    355                 360                 365
Arg Glu Lys Gln Leu Val Pro Gly Gly Lys Phe Ala Leu Phe Leu Met
370                 375                 380
Phe Leu Leu Ile Val Ile Asn Val Val Ser Ile Tyr His Glu Leu
385                 390                 395


        <210> 972
        <211> 241
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 972
Glu Gly Ser Met Gly Leu Tyr Asp Arg Asp Tyr Ile Gln Asp Ser Arg
1               5                   10                  15
Val Gln Gly Thr Phe Ala Ser Arg Val Tyr Gly Trp Met Thr Ala Gly
            20                  25                  30
Leu Ile Val Thr Ser Cys Val Ala Leu Gly Leu Tyr Phe Ser Gly Leu
        35                  40                  45
Tyr Arg Ser Leu Phe Ser Phe Trp Trp Val Trp Cys Phe Ala Thr Leu
    50                  55                  60
Gly Val Ser Phe Phe Ile Asn Ser Lys Ile Gln Thr Leu Ser Val Ser
65                  70                  75                  80
Ala Val Gly Gly Leu Phe Leu Leu Tyr Ser Thr Leu Glu Gly Met Phe
            85                  90                  95
Phe Gly Thr Leu Leu Pro Val Tyr Ala Ala Gln Tyr Gly Gly Gly Val
        100                 105                 110
Ile Trp Ala Ala Phe Gly Ser Ala Ala Leu Val Phe Gly Leu Ala Ala
    115                 120                 125
Val Tyr Gly Ala Phe Thr Lys Ser Asp Leu Thr Lys Ile Ser Lys Ile
    130                 135                 140
```

1173

Met Thr Phe Ala Leu Ile Gly Leu Leu Leu Val Thr Leu Val Phe Ala
145   150   155   160
Val Val Ser Met Phe Val Ser Met Pro Leu Ile Tyr Leu Leu Ile Cys
                165   170   175
Tyr Leu Gly Leu Val Ile Phe Val Gly Leu Thr Ala Ala Asp Ala Gln
                180   185   190
Ala Ile Arg Arg Ile Ser Ser Thr Ile Gly Asp Asn Asn Thr Leu Ser
                195   200   205
Tyr Lys Leu Ser Leu Met Phe Ala Leu Lys Met Tyr Cys Asn Val Ile
        210   215   220
Met Val Phe Trp Tyr Leu Leu Gln Ile Phe Ser Ser Ser Gly Asn Arg
225   230   235   240
Asp

        <210> 973
        <211> 316
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 973
Arg Cys Ile Asn Asn Ser Leu Leu Phe Pro Ser Tyr Leu Val Ser Phe
1   5   10   15
Leu Leu Leu Gln Leu Thr Leu Leu Leu Ala Met Phe Lys Phe Phe Arg
            20   25   30
Asn Lys Leu Gln Ser Leu Phe Lys Lys Asn Ile Ser Leu Asp Leu Ile
        35   40   45
Glu Asp Ala Glu Ser Leu Phe Tyr Glu Ala Asp Phe Gly Thr Glu Leu
        50   55   60
Thr Glu Glu Leu Cys Ala Arg Leu Arg Arg Thr Lys Lys Ala Asp Ala
65   70   75   80
Ser Thr Ile Lys Asp Leu Ile Thr Val Leu Leu Arg Glu Ser Leu Glu
                85   90   95
Gly Leu Pro Ser Gln Ala Ser Gln Ser Ser Gln Thr Arg Pro Ile Val
                100   105   110
Ser Leu Leu Leu Gly Thr Asn Gly Ser Gly Lys Thr Thr Thr Ala Ala
            115   120   125
Lys Leu Ala His Tyr Tyr Lys Glu Arg Ser Glu Ser Val Met Leu Val
        130   135   140
Ala Thr Asp Thr Phe Arg Ala Ala Gly Met Asp Gln Ala Arg Leu Trp
145   150   155   160
Ala Asn Glu Leu Gly Cys Gly Phe Val Ser Gly Gln Pro Gly Gly Asp
                165   170   175
Ala Ala Ala Ile Ala Phe Asp Gly Ile Gln Ser Ala Ile Ala Arg Gly
                180   185   190
Tyr Ser Arg Val Ile Ile Asp Thr Ser Gly Arg Leu His Val His Gly
        195   200   205
Asn Leu Met Lys Glu Leu Ser Lys Ile Val Ser Val Cys Gly Lys Ala
        210   215   220
Leu Glu Gly Ala Pro His Glu Ile Phe Met Thr Val Asp Ser Thr Leu
225   230   235   240
Gly Asn Asn Ala Ile Glu Gln Val Arg Val Phe His Asp Val Val Pro
                245   250   255
Leu Ser Gly Leu Ile Phe Thr Lys Val Asp Gly Ser Ala Lys Gly Gly
                260   265   270
Thr Leu Phe Gln Ile Ala Lys Arg Leu Lys Ile Pro Thr Lys Phe Ile
        275   280   285
Gly Tyr Gly Glu Ser Leu Lys Asp Leu Asn Glu Phe Asp Leu Asp Leu
        290   295   300
Phe Leu Asn Lys Leu Phe Pro Glu Val Glu Lys Ile
305   310   315

<210> 974
<211> 394
<212> PRT
<213> Chlamydia pneumoniae

<400> 974

```
Glu Gly Lys Ser Lys Glu Leu Phe Met His Leu His Glu Tyr Gln Ala
 1               5                  10                  15
Lys Asp Leu Leu Ala Ser Tyr Asp Val Pro Ile Pro Pro Tyr Trp Val
             20                  25                  30
Val Ser Ser Glu Glu Glu Gly Glu Leu Leu Ile Thr Lys Ser Gly Leu
         35                  40                  45
Asp Ser Ala Val Val Lys Val Gln Val His Ala Gly Gly Arg Gly Lys
     50                  55                  60
His Gly Gly Val Ile Val Ala Lys Ser Ser Ala Gly Ile Leu Gln Ala
 65                  70                  75                  80
Val Ala Lys Leu Leu Gly Met His Phe Thr Ser Asn Gln Thr Ala Asp
             85                  90                  95
Gly Phe Leu Pro Val Glu Lys Val Leu Ile Ser Pro Leu Val Ala Ile
            100                 105                 110
Gln Arg Glu Tyr Tyr Val Ala Val Ile Met Asp Arg Lys His Arg Cys
        115                 120                 125
Pro Val Leu Met Leu Ser Lys Ala Gly Gly Met Asp Ile Glu Glu Val
        130                 135                 140
Ala His Ser Ser Pro Glu Gln Ile Leu Thr Leu Pro Leu Thr Ser Tyr
145                 150                 155                 160
Gly His Ile Tyr Ser Tyr Gln Leu Arg Gln Ala Thr Lys Phe Met Glu
                165                 170                 175
Trp Glu Gly Glu Val Met His Gln Gly Val Gln Leu Ile Lys Lys Leu
            180                 185                 190
Ala Lys Cys Phe Tyr Glu Asn Asp Val Ser Leu Leu Glu Ile Asn Pro
        195                 200                 205
Leu Val Leu Thr Leu Glu Gly Glu Leu Leu Val Leu Asp Ser Lys Ile
    210                 215                 220
Thr Ile Asp Asp Asn Ala Leu Tyr Arg His Pro Asn Leu Glu Val Leu
225                 230                 235                 240
Tyr Asp Pro Ser Gln Glu Asn Val Arg Asp Val Leu Ala Lys Gln Ile
            245                 250                 255
Gly Leu Ser Tyr Ile Ala Leu Ser Gly Asn Ile Gly Cys Ile Val Asn
            260                 265                 270
Gly Ala Gly Leu Ala Met Ser Thr Leu Asp Ile Leu Lys Leu His Gly
        275                 280                 285
Gly Asn Ala Ala Asn Phe Leu Asp Val Gly Gly Gly Ala Ser Gln Lys
    290                 295                 300
Gln Ile Gln Glu Ala Val Ser Leu Val Leu Ser Asp Glu Ser Val Lys
305                 310                 315                 320
Val Leu Phe Ile Asn Ile Phe Gly Gly Ile Met Asp Cys Ser Val Val
                325                 330                 335
Ala Ser Gly Leu Val Ala Val Met Glu Thr Arg Asp Gln Val Val Pro
            340                 345                 350
Thr Val Ile Arg Leu Glu Gly Thr Asn Val Glu Leu Gly Lys Glu Ile
            355                 360                 365
Val Gln Gln Ser Gly Ile Pro Cys Gln Phe Val Ser Ser Met Glu Glu
    370                 375                 380
Gly Ala Arg Arg Ala Val Glu Leu Ser Met
385                 390
```

<210> 975
<211> 300
<212> PRT
<213> Chlamydia pneumoniae

1175

<400> 975
```
Val Cys Arg Phe Arg Arg Tyr Met Phe His Ser Leu Ser Lys Asn Thr
1               5                   10                  15
Pro Ile Ile Thr Gln Gly Ile Thr Gly Lys Ala Gly Ser Phe His Thr
            20                  25                  30
Glu Gln Cys Leu Ala Tyr Gly Thr Asn Phe Val Gly Gly Val Thr Pro
        35                  40                  45
Gly Lys Gly Gly Thr Leu Trp Leu Asp Leu Pro Val Tyr Asp Ser Val
    50                  55                  60
Leu Glu Ala Lys Gln Ala Thr Gly Cys Arg Ala Thr Met Ile Phe Val
65                  70                  75                  80
Pro Pro Pro Tyr Ala Ala Glu Ala Ile Leu Glu Ala Glu Glu Ala Gly
            85                  90                  95
Ile Glu Leu Ile Val Cys Ile Thr Glu Gly Ile Pro Val Arg Asp Met
            100                 105                 110
Leu Glu Val Ala Arg Val Met Asp Asn Ser Thr Ser Gln Leu Ile Gly
        115                 120                 125
Pro Asn Cys Pro Gly Ile Ile Lys Pro Gly Glu Cys Lys Ile Gly Ile
    130                 135                 140
Met Pro Gly Tyr Ile His Leu Pro Gly Asn Ile Gly Val Val Ser Arg
145                 150                 155                 160
Ser Gly Thr Leu Thr Tyr Glu Ala Val Trp Gln Leu Thr Gln Leu Lys
            165                 170                 175
Ile Gly Gln Ser Ile Cys Val Gly Ile Gly Gly Asp Pro Leu Asn Gly
            180                 185                 190
Thr Ser Phe Ile Asp Val Leu Gln Ala Leu Glu Glu Asp Pro Tyr Thr
        195                 200                 205
Glu Leu Ile Leu Met Ile Gly Glu Ile Gly Gly Ser Ala Glu Glu Glu
    210                 215                 220
Ala Ala Ala Trp Ile Gln Ala His Cys Thr Lys Pro Val Val Ala Phe
225                 230                 235                 240
Ile Ala Gly Val Thr Ala Pro Lys Gly Lys Arg Met Gly His Ala Gly
            245                 250                 255
Ala Ile Ile Ser Gly Asn Ser Gly Asp Ala Lys Ser Lys Ile Gln Val
            260                 265                 270
Leu Arg Glu Ser Gly Val Thr Val Val Glu Ser Pro Ala His Ile Gly
    275                 280                 285
Lys Thr Val Asp Ala Val Leu Arg Ala Lys Glu Leu
    290                 295                 300
```

<210> 976
<211> 200
<212> PRT
<213> Chlamydia pneumoniae

<400> 976
```
Gly Ile Glu Glu Gln Val Ala Leu Ser Ile Ala Ile Lys Ile Leu Lys
1               5                   10                  15
Ile Ile Leu Ala Leu Ile Leu Phe Pro Leu Val Leu Leu Ala Trp Val
            20                  25                  30
Ile Arg Tyr Gln Leu His Ala Asn Phe His Cys Ser Val Val Pro Phe
        35                  40                  45
Pro Gly Phe Ser Val Asn Gln Ala Tyr Lys Cys Ser Glu Ala Lys Ile
    50                  55                  60
Glu Glu Met Leu Asp Leu Leu Asp Leu Glu Thr Leu Glu Trp Ser Ser
65                  70                  75                  80
Arg Cys Leu Arg Gln Asp Met Thr Phe Ala Asn Arg Leu Glu Glu Glu
            85                  90                  95
Leu Ile Gln Glu Leu Arg Val Ser Glu Thr Glu Glu Leu Ile Ser Leu
            100                 105                 110
```

```
Gly Gly Lys Arg Asn Leu Val Arg Leu Leu Leu Thr His Phe Phe Asn
        115                 120                 125
Pro Pro Lys Arg Ser Arg Val Glu Ser Val Gly His Glu Val Val Phe
        130                 135                 140
Pro Val Phe Asp Arg Leu Lys Arg Glu Glu Glu Ile Ile Gly Asp Gly
145                 150                 155                 160
Pro Ile Thr Arg Ser Asn Glu Glu Leu Trp Ala Leu Leu Asp His Gly
        165                 170                 175
Thr Ala Arg Gly Ile His Lys Thr Leu Trp Phe Ser Ile Phe Phe Lys
        180                 185                 190
Tyr Leu Thr Gln Ile Glu Leu Phe
        195                 200


    <210> 977
    <211> 369
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 977
Ile Leu Met Leu Val Tyr Cys Phe Asp Pro Ser Val Pro Thr Ser Pro
1                   5                   10                  15
Glu His Arg Leu Met Ala Ala Leu Asp Arg Trp Phe Phe Leu Gly Gly
        20                  25                  30
His Arg Ala Arg Ile Leu Thr Leu Glu Gly Asn His Tyr Arg Ala Phe
        35                  40                  45
Gln Glu Asn Met Ser Ile Ser Thr Val Glu Lys Ile Leu Lys Leu Ile
        50                  55                  60
Ser Tyr Leu Leu Ile Pro Ile Val Leu Ile Ala Leu Leu Ile Arg Cys
65                  70                  75                  80
Phe Leu His Ser Arg Phe Lys Cys Asn Trp Lys Cys Asp Ser Leu Ser
                85                  90                  95
Asp Ala Arg Val Pro His Asp Val Gln Pro Phe Asn Asp Phe Gln Leu
                100                 105                 110
Phe Asn Asn Gln Glu Arg Leu Asn Ile Trp Lys Asn Arg Arg Tyr Val
        115                 120                 125
Ser Gly Ile Asp Val Leu Met Val Pro Val Asp Tyr Leu Arg Ser Gln
        130                 135                 140
Phe Pro Gly Phe Lys Glu Ile Pro Glu Ala Ile Arg Cys Glu Asn Tyr
145                 150                 155                 160
Val Ser Asp Gly Gln Phe Ser Glu Glu Ser Lys Thr Ser Tyr Leu Arg
                165                 170                 175
Ala Met Leu Thr Asp Ile Val Gly Tyr Ile Leu Ser Leu Asp Glu Thr
                180                 185                 190
Tyr Trp Thr Asn Val Ile Leu Lys Ile Arg Ala Met Cys Ile Thr Phe
        195                 200                 205
Glu Ser Phe Pro Gly Lys Glu Ala Asp Pro Asn Tyr Ser Pro Arg Val
        210                 215                 220
Thr His His Tyr Phe Asp Glu Ser Trp Lys Ala Leu Ala Arg His Val
225                 230                 235                 240
Leu Gly Glu Gly Asn Met Val Asn Arg Leu Asp Glu Ala Leu Ile Arg
                245                 250                 255
Thr Glu Lys Pro Gly Lys Glu Gly Glu Cys Ile Thr Lys Gln Phe Leu
        260                 265                 270
Lys Asp Tyr Cys Lys Lys His Leu Glu Val Met Ser Cys Pro Asp Phe
        275                 280                 285
Ile Glu Ser Leu Val Asp Glu Lys Ile Arg Glu Phe Arg Cys Pro Ser
        290                 295                 300
Ile Leu Asn Ser Ala Val Cys Asp Val Ile Asp Arg Lys Cys Gln Glu
305                 310                 315                 320
His Leu Leu Lys Ala Ile Ile Asn Glu Ala Asn Arg Arg Leu Pro Gly
                325                 330                 335
```

1177

Met Lys Asn Ser Ser Phe Thr Met Arg Gly Asn Gln Val Leu Phe Tyr
            340   345   350
Thr Ile Phe Ser Pro Pro Lys Leu Pro Pro Ala Ala Ser Ser Val Tyr
            355   360   365
Phe

        <210> 978
        <211> 358
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 978
Leu Tyr Ile Asn Gln Phe Ala Asn Ile Leu Lys Ser Ser Phe Leu Met
  1   5   10   15
Glu Val Tyr Ser Phe Ser Pro Ser Val Arg Thr Ser Phe Gln His Arg
            20   25   30
Val Met Ala Ala Leu Asp Asn Trp Phe Phe Leu Gly Gly Arg Arg Leu
            35   40   45
Lys Val Val Ser Leu Asp Ser Cys Asn Ser Gly Gln Ala Cys Glu Glu
            50   55   60
Tyr Val Pro Ile Ser Thr Thr Glu Lys Val Leu Lys Ile Leu Ser Tyr
 65   70   75   80
Leu Leu Ile Pro Ile Val Ile Ile Ala Leu Leu Ile Arg Tyr Leu Leu
                85   90   95
His Ser Asn Phe Thr Ala Lys Val Ser Gln Lys Pro Trp Leu Lys Thr
            100   105   110
Leu Gln Leu Gly Ile Asp Ile Lys Ser Phe Ile Leu Pro Gly Ser His
            115   120   125
Val Asn Thr Met Asp Ser Ala Thr Leu Phe Lys Ala Ile Arg Leu Glu
            130   135   140
Gly Lys Arg Val Asp Val Glu Tyr His Arg Leu His Ser Ser Asp Lys
145   150   155   160
Val Val Phe Tyr Ile Pro Ala Gln Lys Leu Pro Asp Asp Leu Arg Leu
                165   170   175
Thr His Trp Leu Pro Glu Lys Glu Thr Arg Lys Thr Glu Tyr Val Arg
                180   185   190
His Met Leu Ala His Val Met Gly Tyr Leu Thr Ser Gln Gly Lys Glu
            195   200   205
Arg Leu Gln Gln Val Val Gln Asp Ser Arg Ser Ser Thr Ser Leu Gly
            210   215   220
Ala Glu Lys Val Leu Gln Tyr Arg Phe Ile Asp His Pro Gln Ser Gln
225   230   235   240
Gly Glu Phe Gln Arg Leu Leu Asn Glu Asn Ile Thr Thr Lys Gly Ser
            245   250   255
Glu Asp Lys Glu Val Val Gln Ser Asp Leu Phe Asp Met Ala Phe Gln
            260   265   270
Cys Trp Trp Pro Gln Phe Ile Ser Val Ile Gln Ser Pro Thr Phe Ser
            275   280   285
Glu Glu Leu Val His Glu Met Ser Gln Lys Leu Asp Leu Asp Cys Ile
            290   295   300
Tyr Pro Glu Asp Asp Glu Phe Glu Gln Lys Phe Leu Asn Thr Leu Leu
305   310   315   320
Lys Ala Val Leu His His Gly Phe Glu Gly Ile Ser Val Ala Ser Met
            325   330   335
Gly Val Ile Phe Leu Ile Cys Pro Asp Ser Leu Ala Leu Gln Ile Pro
            340   345   350
Phe Leu Arg Asn Gln Lys
            355

                                  1178

<210> 979
<211> 347
<212> PRT
<213> Chlamydia pneumoniae

<400> 979

```
Lys Tyr Phe Phe Met Glu Val Tyr Ser Phe His Pro Ala Val Arg Thr
1               5                   10                  15
Ser Phe Gln His Arg Val Met Ala Ala Leu Asp Ala Trp Phe Phe Leu
            20                  25                  30
Gly Gly His Arg Leu Lys Val Val Ser Leu Asp Ser Cys Asn Ser Gly
            35                  40                  45
Trp Ala Tyr Gln Glu Leu Val Ser Ile Ser Thr Thr Glu Lys Val Leu
    50                  55                  60
Lys Leu Leu Ser Tyr Leu Leu Val Pro Ile Val Ile Ile Ala Leu Leu
65                  70                  75                  80
Ile Arg Cys Leu Leu His Ser Asn Phe Arg Ile Asp Val Glu Lys Glu
            85                  90                  95
Arg Trp Leu Lys Ile Arg Glu Leu Gly Ile Asp Ile Glu Ser Cys Lys
            100                 105                 110
Leu Pro Ser Ser Tyr Val Asn Gln Val Ser Ser Phe Ile Trp Phe Glu
            115                 120                 125
Lys Asp Lys Ser Lys Arg Pro Arg Ile Asp Val Asp Tyr His Thr Leu
    130                 135                 140
His Ser Lys Asp Trp Val Val Phe Pro Ile Val Phe Gln Lys Ile Pro
145                 150                 155                 160
Lys Thr Ser Arg Phe Ser Tyr Trp Phe Ser Gln Lys Glu Thr Arg Lys
                165                 170                 175
Arg Asp Tyr Val Arg Asn Met Leu Asp His Val Ile Gly Tyr Leu Thr
            180                 185                 190
Ser Glu Gly Gly Glu Trp Leu Gln Tyr Ile Ser Lys Thr Ser Tyr Gln
            195                 200                 205
Ser Ala Thr Ser Leu Asp Pro Glu Arg Val Leu Gln Tyr Cys Leu Thr
    210                 215                 220
Asp Asn Gln Glu Leu Gln Gly Glu Val Gln Arg Leu Leu Asn Glu Glu
225                 230                 235                 240
Ser Ala Thr Lys Ser Ser Gly Asp Lys Glu Val Leu Leu Ser His Val
                245                 250                 255
Ser Asp Ile Ile Cys Gln Cys Trp Trp Pro Lys Phe Leu Glu Val Ile
                260                 265                 270
Gln Ser Pro Ala Phe Ile Glu Glu Leu Val Glu Glu Val Ser Gly Lys
    275                 280                 285
Leu Asn Leu Asp Phe Leu Cys Leu Glu Lys Ala Asn Thr Leu Asp Gln
    290                 295                 300
Glu Leu Arg Asn Ser Leu Leu Arg Ala Val Val His His Gly Ser Glu
305                 310                 315                 320
Gly Val Asp Ile Lys Lys Val Gly Ala Gly Leu Ile Ile Tyr Thr Glu
                325                 330                 335
Ala Ile Gln Leu Gln Ile Pro Phe Ser Arg Ser
    340                 345
```

<210> 980
<211> 491
<212> PRT
<213> Chlamydia pneumoniae

<400> 980

```
Gly Ile Asp Met Ile Thr Lys Gln Leu Arg Ser Trp Leu Ala Val Leu
1               5                   10                  15
Val Gly Ser Ser Leu Leu Ala Leu Pro Leu Ser Gly Gln Ala Val Gly
            20                  25                  30
```

```
Lys Lys Glu Ser Arg Val Ser Glu Leu Pro Gln Asp Val Leu Leu Lys
        35                  40                  45
Glu Ile Ser Gly Gly Phe Ser Lys Val Ala Thr Lys Ala Thr Pro Ala
    50                  55                  60
Val Val Tyr Ile Glu Ser Phe Pro Lys Ser Gln Ala Val Thr His Pro
65                  70                  75                  80
Ser Pro Gly Arg Arg Gly Pro Tyr Glu Asn Pro Phe Asp Tyr Phe Asn
            85                  90                  95
Asp Glu Phe Phe Asn Arg Phe Phe Gly Leu Pro Ser Gln Arg Glu Lys
            100                 105                 110
Pro Gln Ser Lys Glu Ala Val Arg Gly Thr Gly Phe Leu Val Ser Pro
            115                 120                 125
Asp Gly Tyr Ile Val Thr Asn Asn His Val Val Glu Asp Thr Gly Lys
    130                 135                 140
Ile His Val Thr Leu His Asp Gly Gln Lys Tyr Pro Ala Thr Val Ile
145                 150                 155                 160
Gly Leu Asp Pro Lys Thr Asp Leu Ala Val Ile Lys Ile Lys Ser Gln
            165                 170                 175
Asn Leu Pro Tyr Leu Ser Phe Gly Asn Ser Asp His Leu Lys Val Gly
            180                 185                 190
Asp Trp Ala Ile Ala Ile Gly Asn Pro Phe Gly Leu Gln Ala Thr Val
    195                 200                 205
Thr Val Gly Val Ile Ser Ala Lys Gly Arg Asn Gln Leu His Ile Ala
    210                 215                 220
Asp Phe Glu Asp Phe Ile Gln Thr Asp Ala Ala Ile Asn Pro Gly Asn
225                 230                 235                 240
Ser Gly Gly Pro Leu Leu Asn Ile Asp Gly Gln Val Ile Gly Val Asn
            245                 250                 255
Thr Ala Ile Val Ser Gly Ser Gly Gly Tyr Ile Gly Ile Gly Phe Ala
            260                 265                 270
Ile Pro Ser Leu Met Ala Asn Arg Ile Ile Asp Gln Leu Ile Arg Asp
    275                 280                 285
Gly Gln Val Thr Arg Gly Phe Leu Gly Val Thr Leu Gln Pro Ile Asp
    290                 295                 300
Ala Glu Leu Ala Ala Cys Tyr Lys Leu Glu Lys Val Tyr Gly Ala Leu
305                 310                 315                 320
Val Thr Asp Val Val Lys Gly Ser Pro Ala Asp Lys Ala Gly Leu Lys
            325                 330                 335
Gln Glu Asp Val Ile Ile Ala Tyr Asn Gly Lys Glu Val Asp Ser Leu
            340                 345                 350
Ser Met Phe Arg Asn Ala Val Ser Leu Met Asn Pro Asp Thr Arg Ile
    355                 360                 365
Val Leu Lys Val Val Arg Glu Gly Lys Val Ile Glu Ile Pro Val Thr
    370                 375                 380
Val Ser Gln Ala Pro Lys Glu Asp Gly Met Ser Ala Leu Gln Arg Val
385                 390                 395                 400
Gly Ile Arg Val Gln Asn Leu Thr Pro Glu Thr Ala Lys Lys Leu Gly
            405                 410                 415
Ile Ala Pro Glu Thr Lys Gly Ile Leu Ile Ile Ser Val Glu Pro Gly
            420                 425                 430
Ser Val Ala Ala Ser Ser Gly Ile Ala Pro Gly Gln Leu Ile Leu Ala
            435                 440                 445
Val Asn Arg Gln Lys Val Ser Ser Ile Glu Asp Leu Asn Arg Thr Leu
    450                 455                 460
Lys Asp Ser Asn Asn Glu Asn Ile Leu Leu Met Val Ser Gln Gly Asp
465                 470                 475                 480
Val Ile Arg Phe Ile Ala Leu Lys Pro Glu Glu
            485                 490
```

1180

<210> 981
<211> 495
<212> PRT
<213> Chlamydia pneumoniae

<400> 981

```
Phe Val Met Leu Asn His Ala Lys Lys His Ala Lys Pro Tyr Val Leu
1               5                   10                  15
Ile Phe Phe Ser Thr Lys Asp Lys Leu Ser Tyr Cys Asp Ile Ile Phe
            20                  25                  30
Asn Asn Cys Ser Gly Lys Pro Met Asn Leu Asp Ser Lys His Phe Asp
        35                  40                  45
Ile Asn Ser Ala Asn Phe Leu Glu Glu Phe Ala Lys Phe Ile Ser Phe
    50                  55                  60
Pro Ser Ile Ser Ala Asp Ser Asp His Leu Gln Asp Cys Glu Asn Cys
65                  70                  75                  80
Ala His Phe Leu Val Asp His Val Asn Lys Ile Phe Asp Val Glu Leu
            85                  90                  95
Trp Glu Thr Pro Gly His Pro Pro Ile Ile Tyr Ala Ser Tyr Lys Ser
            100                 105                 110
Glu Asp Pro Leu Ser Pro Thr Leu Met Leu Tyr Asn His Tyr Asp Val
        115                 120                 125
Gln Pro Ala Gln Leu Ser Asp Gly Trp Lys Gly Asp Pro Phe Ile Leu
    130                 135                 140
Arg Glu Glu Asn Gly Asn Leu Tyr Ala Arg Gly Ala Ser Asp Asn Lys
145                 150                 155                 160
Gly Gln Cys Phe Tyr Thr Leu Lys Ala Leu Gln His Tyr Tyr Glu Ser
            165                 170                 175
Gln Gly Asn Phe Pro Leu Asn Ile Ile Trp Leu Ile Glu Gly Glu Glu
            180                 185                 190
Glu Ser Gly Ser Leu Ala Leu Phe Thr Trp Leu Glu Lys Lys Lys Glu
            195                 200                 205
Ala Leu Arg Ala Asp Tyr Leu Leu Ile Val Asp Gly Gly Phe Leu Ser
    210                 215                 220
Glu Lys His Pro Tyr Val Ser Ile Gly Ala Arg Gly Ile Val Ser Met
225                 230                 235                 240
Lys Ile Ser Leu Glu Glu Gly Asn Lys Asp Met His Ser Gly Val Leu
            245                 250                 255
Gly Gly Ile Ala Tyr Asn Thr Asn Arg Ala Leu Ser Glu Ile Leu Ser
            260                 265                 270
Ser Leu His His Pro Asp Asn Ser Ile Ala Ile Glu Gly Phe Tyr Asp
            275                 280                 285
Asp Leu Ala Leu Pro Ser Asp Ser Asp Arg Pro Asp Leu Pro Lys Ser
    290                 295                 300
Asp Thr Leu Arg Glu Cys Glu Glu Asn Leu Gly Phe Arg Pro Gln Gly
305                 310                 315                 320
Tyr Glu Ala Ser Tyr Ser Pro Glu Glu Ser Ala Leu Arg Pro Thr Val
            325                 330                 335
Glu Ile Asn Gly Ile Ser Gly Gly Tyr Thr Gly Pro Gly Phe Lys Thr
            340                 345                 350
Val Ile Pro Tyr Arg Ala Thr Ala Tyr Leu Ser Cys Arg Leu Val Pro
        355                 360                 365
Asn Gln Asp Pro Asp Lys Ala Ala His Gln Val Ile His His Leu Lys
    370                 375                 380
Gln Gln Val Pro Ser Ser Leu Lys Phe Ser Tyr Glu Ile Leu Pro Gly
385                 390                 395                 400
Gly Ser Arg Gly Trp Arg Ser Ser Ala Asn Leu Pro Ile Val Lys Val
            405                 410                 415
Leu Gln Glu Ile Tyr Ser Asp Leu Tyr Asn Glu Glu Cys Leu Arg Leu
            420                 425                 430
```

```
Val Met Pro Ala Thr Ile Pro Ile Gly Pro Leu Leu Gly Glu Ala Ala
        435                 440                 445
Gln Thr Ser Pro Ile Ile Cys Gly Thr Ser Tyr Leu Ser Asp Asp Ile
        450                 455                 460
His Ala Ala Glu Glu His Phe Ser Met Asp Gln Leu Lys Lys Gly Phe
465                 470                 475                 480
Leu Ser Ile Cys Gln Leu Leu Asp Lys Leu Pro Lys Ile Lys Glu
                485                 490                 495
```

<210> 982
<211> 978
<212> PRT
<213> Chlamydia pneumoniae

<400> 982

```
Val Thr Glu Ser Met Lys Ala Gly Asp Thr Tyr Arg Asn Phe Ile Ile
1               5                   10                  15
Lys Ser Cys Lys Asp Leu Pro Glu Ile Glu Ser Lys Leu Leu Glu Ala
        20                  25                  30
Glu His Lys Pro Thr Gly Ala Ser Ile Met Met Ile Val Asn Asn Asp
        35                  40                  45
Glu Glu Asn Val Phe Asn Ile Cys Phe Arg Thr Cys Pro Gln Thr Ser
        50                  55                  60
Asn Gly Val Ala His Val Leu Glu His Met Val Leu Cys Gly Ser Glu
65                  70                  75                  80
Asn Tyr Pro Val Arg Asp Pro Phe Phe Ser Met Thr Arg Arg Ser Leu
                85                  90                  95
Asn Thr Phe Ile Asn Ala Phe Thr Gly Pro Asp Phe Thr Cys Tyr Pro
            100                 105                 110
Ala Ala Ser Gln Ile Pro Glu Asp Phe Tyr Asn Leu Leu Ser Val Tyr
        115                 120                 125
Ile Asp Ala Val Phe His Pro Leu Leu Thr Lys Gln Ser Phe Leu Gln
        130                 135                 140
Glu Ala Trp Arg Tyr Glu Phe Asn Ser Glu Asn His Leu Cys Tyr Thr
145                 150                 155                 160
Gly Val Val Phe Asn Glu Met Lys Gly Ala Met Met Ser Gly Glu Ala
                165                 170                 175
Arg Leu Ser Glu Ala Leu Asn Ala Ala Ile Phe Pro Ser Val Thr Tyr
            180                 185                 190
Gly Val Asn Ser Gly Gly Glu Pro Arg Glu Ile Val Thr Leu Ser His
        195                 200                 205
Glu Asp Val Arg Ala Phe His Gln Ser Gln Tyr Ser Ile Asn Arg Cys
        210                 215                 220
Leu Phe Tyr Phe Tyr Gly Asn Ile Lys Pro Ser Arg His Leu Asp Phe
225                 230                 235                 240
Leu Glu Glu Lys Leu Leu Arg Gln Ala Thr Lys Leu Glu Lys Gln Ala
                245                 250                 255
Val Ser Val Pro Leu Gln Lys Arg Phe Lys Glu Pro Val Arg Asn Ile
            260                 265                 270
Leu Thr Tyr Pro Val Asp His Gln Glu Glu Asp Lys Val Leu Phe Gly
        275                 280                 285
Ile Ser Trp Leu Thr Cys Ser Ile Leu Glu Gln Gln Glu Leu Leu Ala
        290                 295                 300
Leu His Val Leu Glu Ile Ile Leu Met Gly Thr Asp Ala Ser Pro Leu
305                 310                 315                 320
Lys Ser Arg Leu Leu Lys Ser Gly Phe Cys Lys Gln Thr Glu Met Ser
                325                 330                 335
Ile Glu Asn Asp Ile Arg Glu Ile Pro Met Thr Leu Val Cys Lys Gly
            340                 345                 350
Cys Ser Pro Ala Gly Ala Gln Lys Leu Glu Ala Leu Ile Phe Ala Ser
        355                 360                 365
```

1182

```
Leu Glu Glu Ile Ile Arg Glu Gly Ile Ser Glu Asn Ile Val Glu Gly
    370              375                 380
Ala Val His Gln Leu Glu Leu Ser Arg Lys Glu Ile Thr Gly Tyr Ser
385              390                 395                 400
Leu Pro Tyr Gly Leu Ser Leu Phe Phe Arg Ser Gly Leu Leu Lys Gln
            405                 410                 415
His Gly Gly Ser Ala Glu Asp Gly Leu Arg Ile His Ser Leu Phe Ser
            420                 425                 430
Glu Leu Arg Asn Ser Leu Lys Asn Ser Asp Tyr Leu Ala Lys Leu Ile
        435                 440                 445
Arg Lys Tyr Phe Leu Asp Asn Pro His Phe Ala Arg Val Ile Leu Leu
    450                 455                 460
Pro Asp Thr Glu Leu Val Ala Lys Asp Asn Lys Asp Glu Gln Gln Leu
465                 470                 475                 480
Leu Leu Ser Val Ser Glu Lys Leu Thr Asp Glu Asn Lys Glu Lys Ile
            485                 490                 495
Gln Gln Asn Val Arg Glu Leu Thr Glu Ser Gln Glu Gln Lys Glu Asp
            500                 505                 510
Leu Asn Gly Ile Leu Pro Asn Leu Ala Leu Asp Lys Val Pro Thr Ser
    515                 520                 525
Gly Lys Glu Phe Pro Leu Ile Lys Glu Gly Leu Ser Gln Gly Glu Val
    530                 535                 540
Leu His His Glu Cys Phe Thr Asn Asp Ile Val Phe Ile Asp Val Val
545                 550                 555                 560
Leu Asp Ile Pro Pro Leu Ser Gly Glu Glu Leu Pro Trp Leu Arg Leu
            565                 570                 575
Leu Val Phe Leu Met Leu Gln Leu Gly Cys Gly Gly Arg Ser Tyr Lys
            580                 585                 590
Glu His Leu Glu Phe Leu Leu Glu His Thr Gly Gly Val Asp Val Ser
    595                 600                 605
Tyr Asp Phe Ser Pro His Ala Asn Lys Asn Ser Phe Leu Ser Pro Ser
    610                 615                 620
Val Ser Ile Arg Gly Lys Ala Leu Ser Ser Lys Ser Glu Lys Leu Cys
625                 630                 635                 640
Gly Ile Val Ser Asp Met Leu Thr Ser Val Asp Phe Thr Asp Ile Pro
            645                 650                 655
Arg Ile Arg Glu Leu Leu Met Gln His Asn Glu Ala Leu Thr Asn Ser
            660                 665                 670
Val Arg Asn Ser Pro Met Ser Tyr Ala Val Ser Met Ala Cys Ser Gly
    675                 680                 685
Asn Ser Ile Thr Gly Ala Met Ser Tyr Leu Thr Thr Gly Leu Pro Tyr
    690                 695                 700
Val Lys Lys Ile Arg Glu Leu Thr Lys Asn Phe Asp Gln Asn Ile Asp
705                 710                 715                 720
Glu Ala Val Val Ile Leu Gln Arg Leu Tyr Thr Lys Cys Phe Ser Gly
            725                 730                 735
Lys Arg Gln Ile Val Ile Ser Gly Ser Ala His Asn Tyr Gln Gln Leu
            740                 745                 750
Lys Asp Asn Lys Phe Tyr Gly Leu Leu Asp Tyr Leu Ile Val Ile Pro
    755                 760                 765
Glu Pro Trp Glu Asn Pro Ser Ile Asn Leu Tyr Val Thr Ser Arg Gly
    770                 775                 780
Leu His Ile Pro Ala Arg Ala Ala Phe Asn Ala Leu Ala Phe Pro Ile
785                 790                 795                 800
Gly Asp Ile Ala Tyr Asp His Pro Asp Ala Ala Ala Leu Thr Val Ala
            805                 810                 815
Ala Glu Ile Leu Asp Asn Val Val Leu His Thr Lys Ile Arg Glu Gln
            820                 825                 830
Gly Gly Ala Tyr Gly Ser Gly Ala Ala Ala Asn Leu Ser Arg Gly Ser
    835                 840                 845
```

1183

```
Phe Tyr Cys Tyr Ser Tyr Arg Asp Pro Glu Ile Ala Thr Thr Tyr Lys
    850                 855                 860
Thr Phe Leu Lys Gly Val Ser Glu Ile Ala Ser Gly Asn Phe Thr Lys
865                 870                 875                 880
Glu Asp Ile Tyr Glu Gly Ala Leu Gly Val Val Gln Gly Leu Asp Met
            885                 890                 895
Pro Val Ala Pro Gly Ser Arg Ala Ser Val Ala Phe Tyr Arg Leu Lys
            900                 905                 910
Ser Gly Arg Ile Pro Val Leu Arg Gln Ala Phe Arg Arg Ser Val Leu
            915                 920                 925
Glu Val Thr Lys Glu His Ile Cys Met Val Met Asp Lys Tyr Leu Glu
    930                 935                 940
Ser Thr Val Gln Glu Thr Thr Leu Ile Ser Phe Ala Gly Glu Glu Met
945                 950                 955                 960
Leu Arg Asn Asn Val Leu Thr Leu Asp Lys Asp Phe Pro Ile Val Pro
                965                 970                 975
Ala Ile
```

```
        <210> 983
        <211> 418
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 983
Lys Lys Glu Leu Ala Ser Val Met Asn Leu Pro Val Ser Leu Ala Cys
1                 5                 10                15
Leu Leu Leu Ser Gly Cys Val Phe Phe Leu Gly Val Phe Val Ser Ser
            20                25                30
Ser Leu Tyr Ala Arg Lys Lys Arg Ala Phe Leu Glu Lys Ile Gln Lys
        35                40                45
Leu Glu His Glu Asn Gln Leu Leu Gln Thr Ser Leu Asn Leu Ser Arg
    50                55                60
His Gln Glu Gln Leu Ile Glu Asp Phe Ser Asn Arg Leu Ala Leu Ser
65                70                75                80
Ser His Lys Leu Ile Lys Asp Met Lys Glu Glu Ala Gln Asn Tyr Phe
            85                90                95
Gly Asp Thr Ser Lys Ser Phe Gln Ser Ile Leu Ser Pro Ile Gln Thr
        100                105                110
Thr Leu Thr Thr Phe Lys Gln Ser Leu Glu Thr Phe Glu Thr Lys His
        115                120                125
Ala Glu Asp Arg Gly Arg Leu Lys Glu Gln Ile Ser Gln Leu Leu Ala
    130                135                140
Val Glu Lys Lys Leu Glu His Glu Thr His Val Leu Thr Asp Ile Leu
145                150                155                160
Lys His Pro Gly Ser Arg Gly Arg Trp Gly Glu Ile Gln Leu Glu Arg
            165                170                175
Ile Leu Glu Leu Ala Gly Met Leu Lys Tyr Cys Asp Tyr Asp Ser Gln
            180                185                190
Thr Thr Ser Ala Gln Gly Ala Phe Arg Ala Asp Ile Ile Ile Arg Leu
        195                200                205
Pro Gln Asp Arg Cys Leu Ile Ile Asp Ala Lys Ala Pro Ile Ser Asp
    210                215                220
Ser Tyr Phe Ser Val Glu Glu Ile Asp Lys Gly Asp Leu Val Asp Lys
225                230                235                240
Ile Lys Glu His Ile Lys Thr Leu Lys Ser Lys Ser Tyr Trp Glu Lys
            245                250                255
Phe His Gln Ser Pro Glu Tyr Val Ile Leu Phe Leu Pro Gly Glu Ser
            260                265                270
Leu Phe Asn Asp Ala Ile Arg Leu Ala Pro Glu Leu Met Glu Ile Gly
    275                280                285
```

1184

```
Ala Ser Ser Asn Val Ile Leu Ser Ser Pro Leu Thr Leu Leu Ala Leu
    290                 295             300              .
Leu Lys Thr Ile Ala Tyr Met Trp Lys Gln Glu Asn Leu Gln Lys Gln
305             310          `  315                         320
Ile Gln Glu Val Ser Leu Leu Gly Lys Glu Leu His Arg Arg Leu Gln
                325             330                     335
Val Val Phe Thr His Phe Gln Lys Ile Gly Lys Asn Leu Asn Gln Thr
            340             345             350
Val Gln Ser Tyr Asn Asp Met Thr Ser Ser Phe Gln Tyr Arg Val Leu
    355             360             365
Pro Thr Leu Arg Lys Phe Glu Gly Leu Glu Thr Ser Ser Ser His Gln
    370             375             380'
Ile Glu Glu Pro Thr Pro Ile Glu Ser Leu Ala Thr Ser Phe Pro His
385             390             395                         400
Thr Cys Asp Ile Asp Thr Asn Leu Ala Val Ile Glu Ser Leu Glu Lys
            405             410                     415
Gln Asp
```

        <210> 984
        <211> 280
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 984

```
Lys Asn Pro Leu Cys Tyr Glu Gln Lys Lys Leu Trp Gln Ile Asp Met
1               5               10              15
Ala Gly Leu Asp Leu Glu Ala Arg Gly Lys Arg Arg Val Val Thr Pro
            20              25              30
Asn Ala Ile Thr Ala Phe Gly Leu Cys Cys Gly Leu Phe Ile Ile Phe
        35              40              45
Lys Ser Val Leu Arg Thr Ser Ser Ser Val Glu Leu Phe His Arg Leu
    50              55              60
Gln Gly Leu Ser Leu Leu Leu Ile Ser Ala Met Ile Ala Asp Phe Ser
65              70              75              80
Asp Gly Ala Ile Ala Arg Ile Met Lys Ala Glu Ser Ala Phe Gly Ala
            85              90              95
Gln Phe Asp Ser Leu Ser Asp Ala Val Thr Phe Gly Ile Ala Pro Pro
            100             105             110
Leu Ile Ala Ile Lys Ser Leu Asp Gly Ile Tyr Val Gly Asn Phe Phe
    115             120             125
Ser Ser Leu Leu Leu Ile Thr Ser Ile Ile Tyr Ser Leu Cys Gly Val
    130             135             140
Leu Arg Leu Val Arg Tyr Asn Leu Phe Ser Gln Lys Thr Val Asp Val
145             150             155             160
Ser Lys Pro Tyr Cys Phe Ile Gly Leu Pro Ile Pro Ala Ala Ala Ala
            165             170             175
Ser Ile Val Ser Leu Ala Leu Phe Leu Ala Ser Asp Phe Phe Pro Asp
            180             185             190
Leu Pro Ala Gln Leu Arg Val Gly Leu Leu Ser Phe Ala Leu Leu Phe
    195             200             205
Ile Gly Gly Leu Met Ile Ser Pro Trp Lys Phe Pro Gly Val Lys His
    210             215             220
Phe Arg Phe Asn Val Ser Ser Phe Leu Leu Val Val Thr Ile Gly Leu
225             230             235             240
Ala Ala Cys Leu Phe Phe Ser Gly Leu Val Asp His Phe Val Glu Val
            245             250             255
Phe Phe Leu Val Ser Trp Leu Tyr Thr Leu Val Gly Phe Pro Ile Phe
            260             265             270
Ser Ile Ile Tyr Arg Lys Lys Ser
    275             280
```

<210> 985
<211> 1047
<212> PRT
<213> Chlamydia pneumoniae

<400> 985
```
Gly Lys Val Met Val Glu Val Glu Glu Lys His Tyr Thr Ile Val Lys
 1               5                  10                  15
Arg Asn Gly Met Phe Val Pro Phe Asn Gln Asp Arg Ile Phe Gln Ala
            20                  25                  30
Leu Glu Ala Ala Phe Arg Asp Thr Arg Ser Leu Glu Thr Ser Ser Pro
        35                  40                  45
Leu Pro Lys Asp Leu Glu Glu Ser Ile Ala Gln Ile Thr His Lys Val
    50                  55                  60
Val Lys Glu Val Leu Ala Lys Ile Ser Glu Gly Gln Val Val Thr Val
65                  70                  75                  80
Glu Arg Ile Gln Asp Leu Val Glu Ser Gln Leu Tyr Ile Ser Gly Leu
                85                  90                  95
Gln Asp Val Ala Arg Asp Tyr Ile Val Tyr Arg Asp Gln Arg Lys Ala
            100                 105                 110
Glu Arg Gly Asn Ser Ser Ser Ile Ile Ala Ile Ile Arg Arg Asp Gly
        115                 120                 125
Gly Ser Ala Lys Phe Asn Pro Met Lys Ile Ser Ala Ala Leu Glu Lys
    130                 135                 140
Ala Phe Arg Ala Thr Leu Gln Ile Asn Gly Met Thr Pro Pro Ala Thr
145                 150                 155                 160
Leu Ser Glu Ile Asn Asp Leu Thr Leu Arg Ile Val Glu Asp Val Leu
                165                 170                 175
Ser Leu His Gly Glu Glu Ala Ile Asn Leu Glu Glu Ile Gln Asp Ile
            180                 185                 190
Val Glu Lys Gln Leu Met Val Ala Gly Tyr Tyr Asp Val Ala Lys Asn
        195                 200                 205
Tyr Ile Leu Tyr Arg Glu Ala Arg Ala Arg Ala Arg Ala Asn Lys Asp
        210                 215                 220
Gln Asp Gly Gln Glu Glu Phe Val Pro Gln Glu Glu Thr Tyr Val Val
225                 230                 235                 240
Gln Lys Glu Asp Gly Thr Thr Tyr Leu Leu Arg Lys Thr Asp Leu Glu
                245                 250                 255
Lys Arg Phe Ser Trp Ala Cys Lys Arg Phe Pro Lys Thr Thr Asp Ser
            260                 265                 270
Gln Leu Leu Ala Asp Met Ala Phe Met Asn Leu Tyr Ser Gly Ile Lys
        275                 280                 285
Glu Asp Glu Val Thr Thr Ala Cys Ile Met Ala Ala Arg Ala Asn Ile
    290                 295                 300
Glu Arg Glu Pro Asp Tyr Ala Phe Ile Ala Ala Glu Leu Leu Thr Ser
305                 310                 315                 320
Ser Leu Tyr Glu Glu Thr Leu Gly Cys Ser Ser Gln Asp Pro Asn Leu
                325                 330                 335
Ser Glu Ile His Lys Lys His Phe Lys Glu Tyr Ile Leu Asn Gly Glu
            340                 345                 350
Glu Tyr Arg Leu Asn Pro Gln Leu Lys Asp Tyr Asp Leu Asp Ala Leu
        355                 360                 365
Ser Glu Val Leu Asp Leu Ser Arg Asp Gln Gln Phe Ser Tyr Met Gly
    370                 375                 380
Val Gln Asn Leu Tyr Asp Arg Tyr Phe Asn Leu His Glu Gly Arg Arg
385                 390                 395                 400
Leu Glu Thr Ala Gln Ile Phe Trp Met Arg Val Ser Met Gly Leu Ala
            405                 410                 415
Leu Asn Glu Gly Glu Gln Lys Asn Phe Trp Ala Ile Thr Phe Tyr Asn
            420                 425                 430
```

```
Leu Leu Ser Thr Phe Arg Tyr Thr Pro Ala Thr Pro Thr Leu Phe Asn
        435             440             445
Ser Gly Met Arg His Ser Gln Leu Ser Ser Cys Tyr Leu Ser Thr Val
    450             455             460
Lys Asp Asp Leu Ser His Ile Tyr Lys Val Ile Ser Asp Asn Ala Leu
465             470             475             480
Leu Ser Lys Trp Ala Gly Gly Ile Gly Asn Asp Trp Thr Asp Val Arg
            485             490             495
Ala Thr Gly Ala Val Ile Lys Gly Thr Asn Gly Lys Ser Gln Gly Val
        500             505             510
Ile Pro Phe Ile Lys Val Ala Asn Asp Thr Ala Ile Ala Val Asn Gln
    515             520             525
Gly Gly Lys Arg Lys Gly Ala Met Cys Val Tyr Leu Glu Asn Trp His
    530             535             540
Leu Asp Tyr Glu Asp Phe Leu Glu Leu Arg Lys Asn Thr Gly Asp Glu
545             550             555             560
Arg Arg Arg Thr His Asp Ile Asn Thr Ala Ser Trp Ile Pro Asp Leu
            565             570             575
Phe Phe Lys Arg Leu Glu Lys Lys Gly Met Trp Thr Leu Phe Ser Pro
        580             585             590
Asp Asp Val Pro Gly Leu His Glu Ala Tyr Gly Leu Glu Phe Glu Lys
        595             600             605
Leu Tyr Glu Glu Tyr Glu Arg Lys Val Glu Ser Gly Glu Ile Arg Leu
    610             615             620
Tyr Lys Lys Val Glu Ala Glu Val Leu Trp Arg Lys Met Leu Ser Met
625             630             635             640
Leu Tyr Glu Thr Gly His Pro Trp Ile Thr Phe Lys Asp Pro Ser Asn
            645             650             655
Ile Arg Ser Asn Gln Asp His Val Gly Val Val Arg Cys Ser Asn Leu
        660             665             670
Cys Thr Glu Ile Leu Leu Asn Cys Ser Glu Ser Glu Thr Ala Val Cys
        675             680             685
Asn Leu Gly Ser Ile Asn Leu Val Glu His Ile Arg Asn Asp Lys Leu
    690             695             700
Asp Glu Glu Lys Leu Lys Glu Thr Ile Ser Ile Ala Ile Arg Ile Leu
705             710             715             720
Asp Asn Val Ile Asp Leu Asn Phe Tyr Pro Thr Pro Glu Ala Lys Gln
            725             730             735
Ala Asn Leu Thr His Arg Ala Val Gly Leu Gly Val Met Gly Phe Gln
            740             745             750
Asp Val Leu Tyr Glu Leu Asn Ile Ser Tyr Ala Ser Gln Glu Ala Val
    755             760             765
Glu Phe Ser Asp Glu Cys Ser Glu Ile Ile Ala Tyr Tyr Ala Ile Leu
    770             775             780
Ala Ser Ser Leu Leu Ala Lys Glu Arg Gly Thr Tyr Ala Ser Tyr Ser
785             790             795             800
Gly Ser Lys Trp Asp Arg Gly Tyr Leu Pro Leu Asp Thr Ile Glu Leu
            805             810             815
Leu Lys Glu Thr Arg Gly Glu His Asn Val Leu Val Asp Thr Ser Ser
        820             825             830
Lys Lys Asp Trp Thr Pro Val Arg Asp Thr Ile Gln Lys Tyr Gly Met
        835             840             845
Arg Asn Ser Gln Val Met Ala Ile Ala Pro Thr Ala Thr Ile Ser Asn
    850             855             860
Ile Ile Gly Val Thr Gln Ser Ile Glu Pro Met Tyr Lys His Leu Phe
865             870             875             880
Val Lys Ser Asn Leu Ser Gly Glu Phe Thr Ile Pro Asn Thr Tyr Leu
            885             890             895
Ile Lys Lys Leu Lys Glu Leu Gly Leu Trp Asp Ala Glu Met Leu Asp
        900             905             910
```

1187

```
Asp Leu Lys Tyr Phe Asp Gly Ser Leu Leu Glu Ile Glu Arg Ile Pro
        915                 920                 925
Asn His Leu Lys Lys Leu Phe Leu Thr Ala Phe Glu Ile Glu Pro Glu
        930                 935                 940
Trp Ile Ile Glu Cys Thr Ser Arg Arg Gln Lys Trp Ile Asp Met Gly
945                 950                 955                 960
Val Ser Leu Asn Leu Tyr Leu Ala Glu Pro Asp Gly Lys Lys Leu Ser
                965                 970                 975
Asn Met Tyr Leu Thr Ala Trp Lys Lys Gly Leu Lys Thr Thr Tyr Tyr
            980                 985                 990
Leu Arg Ser Gln Ala Ala Thr Ser Val Glu Lys Ser Phe Ile Asp Ile
        995                 1000                1005
Asn Lys Arg Gly Ile Gln Pro Arg Trp Met Lys Asn Lys Ser Ala Ser
        1010                1015                1020
Thr Ser Ile Val Val Glu Arg Lys Thr Thr Pro Val Cys Ser Met Glu
1025                1030                1035                1040
Glu Gly Cys Glu Ser Cys Gln
                1045
```

        <210> 986
        <211> 380
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 986
```
Ile Ser Val His Lys Tyr Cys Gly Arg Lys Lys Asn Asn Pro Arg Leu
1                   5                   10                  15
Phe Asn Gly Arg Arg Leu Arg Ile Leu Ser Ile Thr Glu Lys Arg Gly
            20                  25                  30
Ala Lys Met Glu Ala Asp Ile Leu Asp Gly Lys Leu Lys Arg Val Glu
        35                  40                  45
Val Ser Lys Lys Gly Leu Val Asn Cys Asn Gln Val Asp Val Asn Gln
    50                  55                  60
Leu Val Pro Ile Lys Tyr Lys Trp Ala Trp Glu His Tyr Leu Asn Gly
65                  70                  75                  80
Cys Ala Asn Asn Trp Leu Pro Thr Glu Val Pro Met Ala Arg Asp Ile
                85                  90                  95
Glu Leu Trp Lys Ser Asp Glu Leu Ser Glu Asp Glu Arg Arg Val Ile
            100                 105                 110
Leu Leu Asn Leu Gly Phe Phe Ser Thr Ala Glu Ser Leu Val Gly Asn
        115                 120                 125
Asn Ile Val Leu Ala Ile Phe Lys His Ile Thr Asn Pro Glu Ala Arg
    130                 135                 140
Gln Tyr Leu Leu Arg Gln Ala Phe Glu Glu Ala Val His Thr His Thr
145                 150                 155                 160
Phe Leu Tyr Ile Cys Glu Ser Leu Gly Leu Asp Glu Gly Glu Val Phe
                165                 170                 175
Asn Ala Tyr Asn Glu Arg Ala Ser Ile Arg Ala Lys Asp Asp Phe Gln
            180                 185                 190
Met Thr Leu Thr Val Asp Val Leu Asp Pro Asn Phe Ser Val Gln Ser
            195                 200                 205
Ser Glu Gly Leu Gly Gln Phe Ile Lys Asn Leu Val Gly Tyr Tyr Ile
        210                 215                 220
Ile Met Glu Gly Ile Phe Phe Tyr Ser Gly Phe Val Met Ile Leu Ser
225                 230                 235                 240
Phe His Arg Gln Asn Lys Met Thr Gly Ile Gly Glu Gln Tyr Gln Tyr
                245                 250                 255
Ile Leu Arg Asp Glu Thr Ile His Leu Asn Phe Gly Ile Asp Leu Ile
            260                 265                 270
Asn Gly Ile Lys Glu Glu Asn Pro Glu Val Trp Thr Thr Glu Leu Gln
        275                 280                 285
```

1188

```
Glu Glu Ile Val Ala Leu Ile Glu Lys Ala Val Glu Leu Glu Ile Glu
    290                 295                 300
Tyr Ala Lys Asp Cys Leu Pro Arg Gly Ile Leu Gly Leu Arg Ser Ser
305                 310                 315                 320
Met Phe Ile Asp Tyr Val Arg His Ile Ala Asp Arg Arg Leu Glu Arg
                325                 330                 335
Ile Gly Leu Lys Pro Ile Tyr His Ser Arg Asn Pro Phe Pro Trp Met
                340                 345                 350
Ser Glu Thr Met Asp Leu Asn Lys Glu Lys Asn Phe Phe Glu Thr Arg
            355                 360                 365
Val Thr Glu Tyr Gln Thr Ala Gly Asn Leu Ser Trp
370                 375                 380
```

```
        <210> 987
        <211> 228
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 987
Phe Leu Leu Phe Met Lys Pro Gln Asp Leu Ser Pro Pro Phe Leu Trp
1                   5                   10                  15
Lys Glu Arg Arg Pro Cys Ile Gln Asp Gly Val Leu Tyr Val Pro Arg
                20                  25                  30
His Tyr Phe Glu His Gln Asn Phe Ser Thr Ser Tyr His Gln Glu Phe
            35                  40                  45
Phe Gln Asn His Thr Ser Ile Ala Cys Glu Leu Cys Ser Gly Asn Gly
    50                  55                  60
Asp Trp Val Val Ala Gln Ala Gln Lys Asp Pro Gln Val Leu Trp Ile
65                  70                  75                  80
Ala Val Glu Gln Arg Phe Asp Arg Val Arg Lys Ile Trp Ser Lys Met
                85                  90                  95
Ile Asn His Gln Ile Gln Asn Leu Arg Ile Val Cys Gly Thr Ala Glu
            100                 105                 110
Thr Phe Phe Gln Tyr Tyr Val Pro Asp Gln Phe Leu Gln Arg Leu Val
            115                 120                 125
Val Asn Phe Pro Asp Pro Trp Pro Lys Met Arg His Arg Lys His Arg
    130                 135                 140
Leu Leu Gln Pro Ser Phe Val Gln Glu Ile Ser Arg Ser Leu Gln Asp
145                 150                 155                 160
Ser Ala Val Phe Ala Leu Ala Thr Asp Asp Lys Thr Tyr Leu Leu Glu
                165                 170                 175
Ser Ile Glu Ala Leu Gln Thr His Leu Ala Pro Arg Met Glu Thr Pro
                180                 185                 190
Tyr Tyr Ile Lys Met Thr Asp Thr Tyr Gly Asn Ser Trp Phe Glu Asn
                195                 200                 205
Leu Trp Arg Thr Lys Gly Gln Glu Ile Phe Tyr Thr Glu Phe Ile Lys
    210                 215                 220
Lys Ala Gly Ile
225


        <210> 988
        <211> 211
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 988
Leu Glu Asn Gly Ile Phe Ala Ile Gly Phe Phe Met Phe Ala Tyr Arg
1                   5                   10                  15
Thr Leu Leu Thr His Asn Val Val Gln Val Ser His Glu Ile Phe Lys
                20                  25                  30
```

1189

Thr Thr Val Val Pro Gly Asp Thr Val Ile Asp Ala Thr Cys Gly Asn
        35   40   45
Gly Asn Asp Ser Leu Phe Leu Ala Arg Leu Leu Gln Gly Glu Gly Arg
    50   55   60
Leu Val Val Tyr Asp Ile Gln Lys Glu Ala Leu Ser Asn Ala Leu Leu
65   70   75   80
Leu Phe Glu Thr His Leu Ser Glu Gln Glu Arg Ser Val Ile Glu Met
            85   90   95
Lys Glu Gln Ser His Glu His Ile Leu Glu Lys Asp Val Lys Leu Ile
            100   105   110
His Tyr Asn Leu Gly Tyr Leu Pro Lys Gly Asn Lys Glu Ile Thr Thr
        115   120   125
Leu Ala Arg Thr Thr Glu Ile Ser Leu Glu Tyr Ala Leu Asn Ile Val
    130   135   140
Arg Pro Asp Gly Leu Ile Thr Val Val Cys Tyr Pro Gly His Pro Glu
145   150   155   160
Gly Glu Lys Glu Thr His Ser Val Glu Ser Leu Ala Gln Arg Leu His
            165   170   175
Pro Lys Glu Trp Cys Val Ser Ser Phe Tyr Val Ala Asn Arg Cys Arg
            180   185   190
Ala Pro Arg Leu Phe Ile Phe Gln Arg Gln Gly Ser Glu Ser Ser Val
        195   200   205
Asp Lys Gly
    210

        <210> 989
        <211> 319
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 989
Lys Phe Phe Ile Asn Leu Ile Asn Leu Asp Gln Gly Ile Leu Lys Met
1   5   10   15
Lys Glu Ala Ala Pro Met His Phe Pro Phe Pro Val Arg Arg Ser Val
        20   25   30
Trp Leu Asn Arg Tyr Ser Thr Phe Arg Ile Gly Gly Pro Ala Asn Tyr
        35   40   45
Phe Lys Ala Ile His Thr Ile Glu Glu Ala Arg Glu Val Ile Arg Phe
    50   55   60
Leu His Ser Ile Asn Tyr Pro Phe Leu Ile Ile Gly Lys Gly Ser Asn
65   70   75   80
Cys Leu Phe Asp Asp Arg Gly Phe Asp Gly Phe Val Leu Tyr Asn Ala
            85   90   95
Ile Tyr Gly Lys Gln Phe Leu Glu Asp Ala Arg Ile Lys Ala Tyr Ser
            100   105   110
Gly Leu Ser Phe Ala Ala Leu Gly Lys Ala Thr Ala Tyr Asn Gly Tyr
        115   120   125
Ser Gly Leu Glu Phe Ala Ala Gly Ile Pro Gly Ser Val Gly Gly Ala
    130   135   140
Ile Phe Met Asn Ala Gly Thr Asn Glu Ser Asp Ile Ser Ser Val Val
145   150   155   160
Arg Asn Val Glu Thr Ile Asn Ser Glu Gly Glu Leu Cys Ser Tyr Ser
            165   170   175
Val Glu Glu Leu Glu Leu Ser Tyr Arg Ser Ser Arg Phe His Arg Gln
            180   185   190
Gln Glu Phe Ile Leu Ser Ala Thr Phe Gln Leu Ser Lys Lys Gln Val
        195   200   205
Ser Ala Asp His Ser Lys Ser Ile Leu Gln His Arg Leu Met Thr Gln
    210   215   220
Pro Tyr Thr Gln Pro Ser Ala Gly Cys Ile Phe Arg Asn Pro Glu Gly
225   230   235   240

```
Thr Ser Ala Gly Lys Leu Ile Asp Ala Ala Gly Leu Lys Gly Leu Ala
              245                 250                 255
Ile Gly Gly Ala Gln Ile Ser Pro Leu His Ala Asn Phe Ile Ile Asn
              260                 265                 270
Thr Gly Lys Ala Thr Ser Asp Glu Val Lys Gln Leu Ile Ala Ile Ile
              275                 280                 285
Gln Ser Thr Leu Lys Thr Gln Gly Ile Asp Leu Glu His Glu Ile Arg
         290                 295                 300
Ile Ile Pro Tyr Gln Pro Lys Ile His Ser Pro Val Ser Glu Lys
305                 310                 315


        <210> 990
        <211> 179
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 990
Leu Arg Thr Ser Leu Ala Val Lys Cys Val Leu Leu Thr Ile Phe Trp
 1               5                  10                  15
Leu Leu Val Met Ala Thr Leu Ser Pro Glu Lys Phe Ser Gly Ser Pro
              20                  25                  30
Ile Ser Ile Ser Lys Glu Phe Pro Gln Gln Lys Met Arg Glu Ile Ile
         35                  40                  45
Leu Gln Met Leu Tyr Ala Leu Asp Met Ala Pro Ser Ala Glu Asp Ser
    50                  55                  60
Leu Val Pro Leu Leu Met Ser Gln Thr Ala Val Ser Gln Lys His Val
65                  70                  75                  80
Leu Val Ala Leu Asn Gln Thr Lys Ser Ile Leu Glu Lys Ser Gln Glu
              85                  90                  95
Leu Asp Leu Ile Ile Gly Asn Ala Leu Lys Asn Lys Ser Phe Asp Ser
              100                 105                 110
Leu Asp Leu Val Glu Lys Asn Val Leu Arg Leu Thr Leu Phe Glu His
         115                 120                 125
Phe Tyr Ser Pro Pro Ile Asn Lys Ala Ile Leu Ile Ala Glu Ala Ile
    130                 135                 140
Arg Leu Val Lys Lys Phe Ser Tyr Ser Glu Ala Cys Pro Phe Ile Gln
145                 150                 155                 160
Ala Ile Leu Asn Asp Ile Phe Thr Asp Ser Ser Leu Asn Glu Asn Ser
              165                 170                 175
Leu Ser Ile


        <210> 991
        <211> 187
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 991
Ser Val Ala Leu Asn Phe Lys Ile Asn Arg Gln Ile Arg Ala Pro Lys
 1               5                  10                  15
Val Arg Leu Ile Gly Ser Ala Gly Glu Gln Leu Gly Ile Leu Ala Ile
              20                  25                  30
Lys Asp Ala Leu Asp Leu Ala Arg Glu Ala Gly Leu Asp Leu Val Glu
         35                  40                  45
Val Ala Ser Asn Ser Glu Pro Pro Val Cys Lys Ile Met Asp Tyr Gly
    50                  55                  60
Lys Tyr Arg Tyr Gly Leu Thr Lys Lys Glu Lys Asp Ser Lys Lys Ala
65                  70                  75                  80
Gln His Gln Val Arg Ile Lys Glu Val Lys Leu Lys Pro Asn Ile Asp
              85                  90                  95
```

1191

Glu Asn Asp Phe Ser Thr Lys Leu Lys Gln Ala Arg Thr Phe Val Glu
              100   105   110
Lys Gly Asn Lys Val Lys Ile Thr Cys Met Phe Arg Gly Arg Glu Leu
              115   120   125
Ala Tyr Pro Glu His Gly Phe Lys Val Val Gln Lys Met Ser Gln Gly
    130   135   140
Leu Glu Asp Ile Gly Phe Val Glu Ala Glu Pro Lys Leu Ala Gly Arg
145   150   155   160
Ser Leu Ile Cys Val Val Ala Pro Gly Thr Val Lys Thr Lys Lys Lys
              165   170   175
Gln Glu Lys Ser His Ala Gln Asp Glu Asn Gln
              180   185

        <210> 992
        <211> 73
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 992
Lys Gln Arg Lys Asn Arg Lys Ser Leu Met Pro Lys Met Lys Thr Asn
1   5   10   15
Lys Ser Val Ser Ala Arg Phe Lys Leu Thr Ala Ser Gly Gln Leu Lys
              20   25   30
Arg Thr Arg Pro Gly Lys Arg His Lys Leu Ser Lys Lys Ser Ser Gln
        35   40   45
Glu Lys Arg Asn Leu Ser Lys Gln Pro Leu Val Asp Lys Gly Gln Val
    50   55   60
Gly Met Tyr Lys Arg Met Met Leu Val
65   70

        <210> 993
        <211> 125
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 993
Gly Lys Leu Val Met Val Arg Ala Thr Gly Ser Val Ala Ser Arg Arg
1   5   10   15
Arg Arg Lys Arg Ile Leu Lys Gln Ala Lys Gly Phe Trp Gly Asp Arg
              20   25   30
Lys Gly His Ile Arg Gln Ser Arg Ser Ser Val Met Arg Ala Met Ala
        35   40   45
Phe Asn Tyr Met His Arg Lys Asp Arg Lys Gly Asp Phe Arg Ser Leu
    50   55   60
Trp Ile Ala Arg Leu Asn Val Ala Ser Arg Ile His Ser Leu Ser Tyr
65   70   75   80
Ser Arg Leu Ile Asn Gly Leu Lys Cys Ala Asn Ile Ser Leu Asn Arg
              85   90   95
Lys Met Leu Ser Glu Ile Ala Ile His Asn Pro Glu Gly Phe Ala Glu
              100   105   110
Ile Ala Asn Gln Ala Lys Lys Ala Leu Glu Ala Thr Val
        115   120   125

        <210> 994
        <211> 352
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 994
Lys Ser Phe Gly Ser His Ser Leu Gly Ile Arg Ile Ser Met Glu Met
1   5   10   15

1192

Lys Glu Glu Ile Glu Ala Val Lys Gln Gln Phe His Ser Glu Leu Asp
            20   25   30
Gln Val Asn Ser Ser Gln Ala Leu Ala Asp Leu Lys Val Arg Tyr Leu
            35   40   45
Gly Lys Lys Gly Ile Phe Arg Ser Phe Ser Glu Lys Leu Lys Gln Cys
      50   55   60
Thr Asp Lys Ala Lys Leu Gly Ser Leu Ile Asn Asp Phe Lys Thr Tyr
65   70   75   80
Val Glu Asp Leu Leu Gln Glu Lys Ser Leu Val Leu Leu Ala Ser Glu
            85   90   95
Gln Ala Glu Ala Phe Ser Lys Glu Lys Ile Asp Ser Ser Leu Pro Gly
            100   105   110
Asp Ser Gln Pro Ser Gly Gly Arg His Ile Leu Lys Ser Ile Leu Asp
            115   120   125
Asp Val Val Asp Ile Phe Val His Leu Gly Phe Cys Val Arg Glu Ala
      130   135   140
Pro Asn Ile Glu Ser Glu Ala Asn Asn Phe Thr Leu Leu Asn Phe Thr
145   150   155   160
Glu Asp His Pro Ala Arg Gln Met His Asp Thr Phe Tyr Leu Asn Ala
            165   170   175
Thr Thr Val Leu Arg Thr His Thr Ser Asn Val Gln Ala Arg Glu Leu
            180   185   190
Lys Lys Gln Gln Pro Pro Ile Lys Val Val Ala Pro Gly Leu Cys Phe
            195   200   205
Arg Asn Glu Asp Ile Ser Ala Arg Ser His Val Leu Phe His Gln Val
      210   215   220
Glu Ala Phe Tyr Val Asp His Asn Val Thr Phe Ser Asp Leu Thr Ala
225   230   235   240
Ile Leu Ser Ala Phe Tyr His Ser Phe Phe Gln Arg Lys Thr Glu Leu
            245   250   255
Arg Phe Arg His Ser Tyr Phe Pro Phe Val Glu Pro Gly Ile Glu Val
            260   265   270
Asp Val Ser Cys Glu Cys Cys Gly Lys Gly Cys Ala Leu Cys Lys His
      275   280   285
Thr Gly Trp Leu Glu Val Ala Gly Ala Gly Met Ile His Pro Gln Val
      290   295   300
Leu Arg Asn Gly Asn Val Asp Pro Glu Ile Tyr Ser Gly Tyr Ala Val
305   310   315   320
Gly Met Gly Ile Glu Arg Leu Ala Met Leu Lys Tyr Gly Val Ser Asp
            325   330   335
Ile Arg Leu Phe Ser Glu Asn Asp Leu Arg Phe Leu Gln Gln Phe Ser
            340   345   350

        <210> 995
        <211> 690
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 995
Leu Phe Trp Phe His Arg Gly Gly Arg Met Lys Arg Ser Arg Arg Asn
1   5   10   15
Phe Glu Gln Ala Leu Glu Asn Leu Glu Lys Leu Lys Glu Ile Ser Leu
            20   25   30
Ala Thr Ser Asn Asp Ser Tyr Leu Asn Asn Pro Ala Arg Phe Asn Gln
            35   40   45
Arg Lys Gln Thr Gly Ser Ser Val Met Glu Met Lys Glu Ala Leu Lys
      50   55   60
Asn Val Glu Asn Tyr Leu Leu Glu Ile Ser Cys Val Ser Lys Ser His
65   70   75   80
Ala Asp Lys Ala Leu Lys Glu Ser Asp Phe Leu Ile Ala Gly Val Gln
            85   90   95

                                1193

```
Asn Val Phe Ser Phe Leu Glu Asn Gln Glu Asp Leu Tyr Lys Ser Leu
            100                 105                 110
Leu Asp Glu Tyr Ser Glu Val Thr Lys Ala Tyr Asp Glu Val Lys Lys
            115                 120                 125
Asn Leu Lys Glu Val Pro Thr Tyr Asp Leu Ser Thr Asp Glu Glu Thr
            130                 135                 140
Glu Glu His Lys Glu Pro Glu Cys Phe Leu Asn Asn Leu Val Glu Val
145                 150                 155                 160
Lys Arg Asp Arg Ser Tyr Glu Leu Phe Tyr Met Leu Asp Glu Gln Asp
                165                 170                 175
Lys Arg Phe Tyr Asn Asp Ala Leu Val Gln Ile Ile Tyr Lys Gln Asn
            180                 185                 190
Lys Leu His Glu Thr Val Asn Glu Gly Asp Pro Leu Thr Lys Thr Leu
            195                 200                 205
Leu Trp Asn Ser Glu Glu Val Lys Asn Ile Ala Ser Ser Leu Val Ile
            210                 215                 220
Val Asn Asp Met Pro Leu Arg Leu Phe Tyr Gln Arg Ala Leu Ser His
225                 230                 235                 240
Leu Asp Ile Glu Ala Val Val Lys Val His Asn Ala Val Met Ala Leu
                245                 250                 255
Phe Phe Ser Arg Tyr Glu Ala Thr Met Val Phe Lys Ser Pro Lys Lys
                260                 265                 270
His Asn Ile Trp Tyr Phe Asn Asp Phe Leu Leu Phe Leu Arg Glu Ala
            275                 280                 285
Trp Lys Asp Leu Asn Asn Asn Val Ile Asp Ser Gln Glu Arg Lys Gln
            290                 295                 300
Thr Lys Leu Leu Ala Ser Ala Leu Ser Leu Gly Ile Phe Glu Ser Lys
305                 310                 315                 320
Leu Val Phe Glu Glu Ala Ser Arg Tyr Leu Tyr Phe Asn Ile Gln Thr
                325                 330                 335
Lys Leu Glu Asn Ala Asn Gly Lys Lys Pro Leu Ser Pro Gly Gln Tyr
            340                 345                 350
Leu Thr Asp Ala Tyr Glu Glu Leu His Arg Leu Ile Ser Lys Tyr Pro
            355                 360                 365
Asn Gly Pro Leu Phe Lys Ala Met Asp Arg Val Leu Glu His Glu Ser
            370                 375                 380
Arg Pro Tyr Asp Pro Met Ile Leu Gly Ile Leu Pro Ser Leu Glu Gly
385                 390                 395                 400
Thr Leu Lys Leu His Gly Lys Ser Ile Asp Ile Ile Arg Ser Pro Ser
                405                 410                 415
Pro Val Thr Gln Ser Ser Ile Leu Tyr Ala Asn Cys Asn Glu Glu Phe
            420                 425                 430
Leu Gly Phe Leu Asn Ala Lys Ala His Arg Ser Glu Val Thr Leu Val
            435                 440                 445
Leu Asn Ile Gln Asn Arg Ile Ser Arg Lys Glu Arg Ala Arg Ser Arg
            450                 455                 460
Val Ile Glu Glu Ala Leu Glu Gln Glu Glu His Ala Pro Tyr Val His
465                 470                 475                 480
Ala Phe Ser Phe Pro Glu Pro Glu Glu Leu Leu Gln Asn Leu Glu Ser
                485                 490                 495
Ile His Gly Asp Ile Glu Thr Phe Ala Asp Phe Phe Ser Ile Leu Gln
            500                 505                 510
Glu Glu Phe His Lys Pro Leu Leu Ala Ser Ser Phe Phe Leu Thr Lys
            515                 520                 525
Glu Leu Lys Glu Phe Val Gly Ser Phe Leu Lys Glu Lys Leu Thr Ala
            530                 535                 540
Leu Lys Asp Ile Phe Phe Ala Lys Lys Lys Ile Leu Phe Arg Asn Asp
545                 550                 555                 560
Lys Leu Leu Leu Leu His Leu Leu Ser Tyr Leu Ile Val Phe Lys Leu
                565                 570                 575
```

```
Ile Glu Arg Thr Asn Pro Asn Ser Ile Val Val Val Ser Lys Asp Gly
        580                 585                 590
Leu Asp Tyr Val Ser Val Phe Ile Ala Gly Phe Ala Phe Phe Ser Arg
        595                 600                 605
Glu Ala Phe Trp Asp Glu His Ser Leu Lys Leu Leu Leu Thr Asn Val
    610                 615                 620
Leu Ser Pro Thr Leu Val Ala Arg Asp Arg Leu Val Phe Val Ser His
625                 630                 635                 640
Ile Glu Leu Leu Ser Lys Phe Val Asn Cys Leu Lys Lys Asn Arg Gln
        645                 650                 655
Gly Phe Ser Ser Leu Lys Ser Phe Phe Lys Asp Asp Ile Glu Gly Trp
        660                 665                 670
Glu Phe Thr Gly Tyr Leu His Glu Leu Thr Glu Val Ser His Lys His
        675                 680                 685
Asn Leu
    690


        <210> 996
        <211> 367
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 996
Arg Met Leu Ile Trp Lys Arg His Leu Leu Thr Arg Phe Trp Phe Ala
1                   5                   10                  15
Leu Thr Ser Leu Leu Val Leu Ala Leu Ile Phe Tyr Ala Ser Ile His
        20                  25                  30
His Ser Leu His Thr Leu Lys Gly Ala Ser Thr Ala Ala Ser Gly Ala
        35                  40                  45
Ser Val Lys Leu Ser Ile Leu Tyr Tyr Leu Ala Gln Ile Ser Leu Lys
    50                  55                  60
Ala Glu Phe Leu Met Pro Gln Leu Val Ala Val Ala Thr Thr Ser Thr
65                  70                  75                  80
Leu Phe Ala Met Gln Asn Lys Arg Glu Ile Ile Leu Leu Gln Ala Ser
            85                  90                  95
Gly Leu Ser Leu Lys Ser Leu Met His Pro Leu Leu Leu Ser Gly Ala
        100                 105                 110
Val Ile Met Met Val Leu Tyr Ala Asn Phe Gln Trp Leu His Pro Ile
        115                 120                 125
Cys Glu Lys Ile Ser Ile Thr Lys Glu Asn Met Asp Arg Gly Thr Thr
    130                 135                 140
Asp Lys Glu Gln Gly Lys Ile Pro Ala Leu Tyr Leu Lys Asp Gln Thr
145                 150                 155                 160
Val Leu Leu Tyr Ser Ser Ile Glu Pro Lys Thr Leu Thr Leu Asn Asn
            165                 170                 175
Val Phe Trp Ile Lys Asp Pro Lys Thr Ile Tyr Thr Met Glu Lys Leu
        180                 185                 190
Ala Phe Thr Thr Leu Ser Leu Pro Ile Gly Leu Asn Val Thr Gln Phe
        195                 200                 205
Phe Ala Asn Asp Ser Glu Asn Leu Glu Leu Lys Glu Phe Phe Asp Met
    210                 215                 220
Lys Glu Phe Pro Glu Ile Glu Phe Asn Phe Tyr Glu Asn Pro Phe Ser
225                 230                 235                 240
Lys Leu Phe Ser Ala Gly Asn Lys Asn Arg Leu Ser Glu Phe Phe Lys
            245                 250                 255
Ala Ile Pro Trp Asn Ala Thr Gly Leu Gly Leu Ser Thr Gln Val Pro
        260                 265                 270
Gln Arg Ile Leu Ser Leu Leu Ala Gln Phe Tyr Tyr Val Leu Ile Ser
        275                 280                 285
Pro Leu Ala Cys Met Ala Ala Ile Ile Leu Ser Ala Tyr Leu Cys Leu
    290                 295                 300
```

```
Arg Phe Ser Arg Thr Pro Thr Val Thr Leu Ala Tyr Leu Ile Pro Leu
305             310             315                 320
Gly Thr Val Asn Ile Phe Phe Val Phe Leu Lys Ala Gly Ile Val Leu
                325             330                 335
Ala Ser Ser Ser Val Leu Pro Thr Leu Pro Val Met Ala Phe Pro Leu
                340             345                 350
Ile Val Leu Phe Leu Leu Thr Asn Tyr Ala Tyr Ala Lys Leu Gln
                355             360                 365


        <210> 997
        <211> 358
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 997
Ala Met Pro Ile Leu Trp Lys Val Leu Ile Phe Arg Tyr Leu Lys Thr
1               5               10                  15
Ala Ala Phe Cys Thr Leu Ser Leu Ile Cys Ile Ser Ile Ile Ser Ser
                20              25                  30
Leu Gln Glu Ile Val Ala Tyr Ile Ala Lys Asp Val Pro Tyr Asp Thr
                35              40                  45
Val Leu Arg Leu Met Ala Tyr Gln Ile Pro Tyr Leu Leu Pro Phe Ile
                50              55              60
Leu Pro Gly Ser Cys Phe Val Ser Ala Phe Ser Leu Phe Arg Lys Leu
65              70              75                  80
Ser Asp Asn Asn His Met Thr Phe Leu Arg Ala Ser Gly Ala Ser Gln
                85              90                  95
Ser Ile Ile Met Phe Pro Val Leu Met Val Ser Gly Ala Ile Cys Cys
                100             105                 110
Leu Asn Phe Tyr Thr Cys Ser Glu Leu Ala Ser Ile Cys Arg Tyr Gln
                115             120             125
Thr Cys Lys Glu Ile Ala Asn Met Ala Met Thr Ser Pro Ala Leu Leu
        130             135             140
Leu Gln Thr Leu Gln Lys Lys Glu Asn Asn Arg Ile Phe Ile Ala Val
145             150             155                 160
Asp His Cys Ala Lys Ser Lys Phe Asp Asn Val Ile Val Ala Leu Lys
                165             170             175
Gly Asn Asn Glu Ile Ser His Val Gly Ile Ile Lys Ser Ile Ile Pro
                180             185             190
Asp Thr Thr Lys Asp Thr Val Lys Ala Lys Asp Val Val Phe Ile Ser
        195             200             205
Lys Leu Pro Asp Ser Leu Thr Glu Ser Ser Ser Pro Ser Ser Gln Arg
        210             215             220
Phe Tyr Ile Glu Thr Leu Asp Glu Leu Leu Ile Pro Lys Ile Thr Ser
225             230             235                 240
Thr Leu Phe Ala Gly Lys Ser Tyr Leu Lys Thr Arg Thr Asp Tyr Leu
                245             250             255
Pro Trp Lys Gln Leu Val Lys Gln Ser Leu Lys His Ser His Leu Pro
                260             265             270
Glu Thr Leu Arg Arg Val Ala Ile Gly Phe Leu Cys Ile Thr Leu Thr
        275             280             285
Tyr Ala Gly Met Ile Leu Gly Ile His Lys Pro Arg Phe Arg Lys Ser
        290             295             300
Ile Ala Leu Tyr Phe Ile Phe Pro Ile Leu Asp Leu Ile Leu Leu Ile
305             310             315                 320
Val Gly Lys Asn Thr Lys Asn Leu Pro Leu Ala Phe Met Leu Phe Val
                325             330                 335
Phe Pro Gln Leu Val Ser Trp Val Val Phe Ala Ala Arg Ala Tyr Arg
                340             345                 350
Glu Ser Arg Gly Tyr Ala
        355
```

1196

<210> 998
<211> 322
<212> PRT
<213> Chlamydia pneumoniae

<400> 998

```
Ala Tyr Lys Met Val Leu Ser Ser Asp Leu Leu Arg Asp Asp Lys Gln
1               5                   10                  15
Leu Asp Leu Phe Phe Ala Ser Leu Asp Val Lys Lys Arg Tyr Leu Leu
            20                  25                  30
Ala Leu Ser Gly Gly Ser Asp Ser Leu Phe Leu Phe Tyr Leu Leu Lys
        35                  40                  45
Glu Arg Gly Val Ser Phe Thr Ala Val His Ile Asp His Gly Trp Arg
    50                  55                  60
Ser Thr Ser Ala Gln Glu Ala Lys Glu Leu Glu Glu Leu Cys Ala Arg
65                  70                  75                  80
Glu Gly Val Pro Phe Val Leu Tyr Thr Leu Thr Ala Glu Glu Gln Gly
                85                  90                  95
Asp Lys Asp Leu Glu Asn Gln Ala Arg Lys Lys Arg Tyr Ala Phe Leu
            100                 105                 110
Tyr Glu Ser Tyr Arg Gln Leu Asp Ala Gly Gly Ile Phe Leu Ala His
        115                 120                 125
His Ala Asn Asp Gln Ala Glu Thr Val Leu Lys Arg Leu Leu Glu Ser
    130                 135                 140
Ala His Leu Thr Asn Leu Lys Ala Met Ala Glu Arg Ser Tyr Val Glu
145                 150                 155                 160
Asp Val Leu Leu Leu Arg Pro Leu Leu His Ile Pro Lys Ser Ser Leu
                165                 170                 175
Lys Glu Ala Leu Asp Ala Arg Gly Ile Ser Tyr Leu Gln Asp Pro Ser
            180                 185                 190
Asn Glu Asp Glu Arg Tyr Leu Arg Ala Arg Met Arg Lys Lys Leu Phe
            195                 200                 205
Pro Trp Leu Glu Glu Val Phe Gly Lys Asn Ile Thr Phe Pro Leu Leu
    210                 215                 220
Thr Leu Gly Glu Glu Ser Ala Glu Leu Ser Glu Tyr Leu Glu Lys Gln
225                 230                 235                 240
Ala Gln Pro Phe Phe Ser Ala Ala Thr His Gln Asp Ser Gln Gly Glu
                245                 250                 255
Leu Pro Cys Pro Asp Cys Leu Ile Gln Gln Ala Phe Leu Cys Lys Trp
            260                 265                 270
Val Met Lys Lys Phe Phe Asn Asn Ala Gly Ile Ala Val Ser Arg His
        275                 280                 285
Phe Leu Gln Met Val Tyr Asp His Leu Ser Arg Ser Ser Cys Ala Thr
    290                 295                 300
Leu Arg Met Arg Asn Lys Ile Val Ile Ile Lys Pro Gly Val Val Val
305                 310                 315                 320
Ile Asp
```

<210> 999
<211> 918
<212> PRT
<213> Chlamydia pneumoniae

<400> 999

```
Leu Ile Ser Leu Val Val Lys Phe Met Ser Lys Asp Lys Lys Met Lys
1               5                   10                  15
Pro Glu Pro Lys Lys Asn Phe Pro Thr Val Phe Phe Phe Leu Leu Phe
            20                  25                  30
Gly Val Val Phe Gly Val Val Ala Phe Gln Asn Phe Leu Ala Gly Lys
        35                  40                  45
```

1197

```
Lys Ala Arg Val Gly Phe Ser His Gln Ile Glu His Leu Val Asn Leu
    50                  55                  60
Arg Leu Ile Val Pro Glu Asp Ser His Lys Ile Ala Leu Asn Asp Asn
65                  70                  75                      80
Leu Val Ser Phe Gly Gly Arg Phe Arg Asp Val Gln Thr Gln Glu Gly
                85                  90                  95
Gln Leu Arg Tyr His Tyr Leu Glu Leu Ile Asp Gln Gly His Arg Leu
                100                 105                 110
Asp Leu Asp Leu Gln Glu Thr Ser Lys Ser Leu Thr Thr Leu Gly Lys
            115                 120                 125
Glu Val Thr Asn Ser Ile Leu Trp Phe Ser Ala Ile Ser Gly Ser Pro
    130                 135                 140
Ile Pro Glu Gln Gly Tyr Ala Ile Ser Tyr Pro Ser Glu Val Ser Gly
145                 150                 155                 160
Ser Val Leu Thr Glu Pro Leu Val Val Thr Gly Pro Ala Thr Pro Gln
                165                 170                 175
Leu Ile Asn Leu His Ser Leu Gln Glu Arg Tyr Pro Thr Leu Ser Arg
                180                 185                 190
Ser Pro Glu Ala Leu Arg Thr Tyr Gly Ser Asp Leu Tyr Glu Leu Ile
            195                 200                 205
Gly Lys Tyr Leu Ser Pro Val Leu Gly Ile Gly Ser Glu Thr Leu Lys
    210                 215                 220
Arg Glu Leu Lys Asp Leu Tyr Gln Gln Val Glu Val Ser Leu Thr Gln
225                 230                 235                 240
Glu Thr Asp Thr Glu Ala Ala Tyr Thr Leu Tyr Gly Gln Val Leu Ser
                245                 250                 255
Thr Leu Asn Arg Ile Ser Ser Ser Leu Val Val Ser Glu Gly Gly Glu
                260                 265                 270
Arg Phe Ser Gln Leu Arg Ser Val Arg Leu Tyr Arg Glu Glu Trp Asn
            275                 280                 285
Lys Tyr His Lys Leu Val Glu Ala Arg Asp Leu Asn Gln Ala Gln Leu
    290                 295                 300
Glu Lys Leu Arg Gly Glu Leu Ser Gln Thr Val Trp Tyr Phe Asn Asn
305                 310                 315                 320
Gln Glu Leu Ser Ser Arg Ser Leu Glu Lys Gln Asp Pro Glu Val Phe
                325                 330                 335
Gly His Trp Phe Ala Gly Ala Lys Glu Glu Trp Thr Ala Phe Lys Phe
            340                 345                 350
Asn His Ser Leu Ser Phe Lys Ala Pro Asp Gln Pro Arg Asn Leu Val
            355                 360                 365
Leu Glu Lys Thr Phe Lys Ser Gln Glu Pro Ser Pro His Tyr Leu Gly
    370                 375                 380
Tyr Leu Phe Thr Phe Leu Pro Ile Ile Leu Val Leu Leu Phe Val Tyr
385                 390                 395                 400
Leu Val Phe Ser Arg Gln Met Arg Gly Met Ser Gly Ser Ala Met Ser
                405                 410                 415
Phe Gly Lys Ser Pro Ala Arg Met Leu Leu Lys Gly Gln Asn Lys Val
                420                 425                 430
Thr Phe Ala Asp Val Ala Gly Ile Glu Glu Ala Lys Glu Glu Leu Ile
            435                 440                 445
Glu Ile Val Asp Phe Leu Lys Asn Pro Asn Lys Phe Thr Ser Leu Gly
    450                 455                 460
Gly Arg Ile Pro Lys Gly Val Leu Leu Ile Gly Pro Pro Gly Thr Gly
465                 470                 475                 480
Lys Thr Leu Ile Ala Lys Ala Val Ser Gly Glu Ala Asp Arg Pro Phe
                485                 490                 495
Phe Ser Ile Ala Gly Ser Asp Phe Val Glu Met Phe Val Gly Val Gly
            500                 505                 510
Ala Ser Arg Ile Arg Asp Met Phe Glu Gln Ala Lys Arg Asn Ala Pro
    515                 520                 525
```

1198

```
Cys Ile Ile Phe Ile Asp Glu Ile Asp Ala Val Gly Arg His Arg Gly
    530                 535                 540
Ala Gly Ile Gly Gly Gly His Asp Glu Arg Glu Gln Thr Leu Asn Gln
545                 550                 555                 560
Leu Leu Val Glu Met Asp Gly Phe Gly Thr Asn Glu Gly Val Ile Leu
                565                 570                 575
Met Ala Ala Thr Asn Arg Pro Asp Val Leu Asp Lys Ala Leu Leu Arg
                580                 585                 590
Pro Gly Arg Phe Asp Arg Arg Val Val Met Asn Leu Pro Asp Ile Lys
            595                 600                 605
Gly Arg Phe Glu Ile Leu Met Val His Ala Lys Arg Ile Lys Leu Asp
    610                 615                 620
Pro Thr Val Asp Leu Met Ala Val Ala Arg Ser Thr Pro Gly Ala Ser
625                 630                 635                 640
Gly Ala Asp Leu Glu Asn Leu Leu Asn Glu Ala Ala Leu Leu Ala Ala
                645                 650                 655
Arg Lys Asp Arg Thr Ala Val Thr Ala Val Asp Val Ala Glu Ala Arg
                660                 665                 670
Asp Lys Val Leu Tyr Gly Lys Glu Arg Arg Ser Leu Glu Met Asp Ala
                675                 680                 685
Glu Glu Arg Lys Thr Thr Ala Tyr His Glu Ser Gly His Ala Val Val
    690                 695                 700
Gly Leu Cys Val Gln His Gly Asp Pro Val Asp Lys Val Thr Ile Ile
705                 710                 715                 720
Pro Arg Gly Leu Ser Leu Gly Ala Thr His Phe Leu Pro Glu Lys Asn
                725                 730                 735
Lys Leu Ser Tyr Trp Lys Lys Glu Leu Tyr Asp Gln Leu Ala Val Leu
                740                 745                 750
Met Gly Gly Arg Ala Ala Glu Glu Ile Phe Leu Gly Asp Ile Ser Ser
    755                 760                 765
Gly Ala Gln Gln Asp Ile Ser Gln Ala Thr Lys Leu Val Arg Ser Met
    770                 775                 780
Val Cys Glu Trp Gly Met Ser Pro Gln Leu Gly Asn Val Thr Tyr Asp
785                 790                 795                 800
Glu Arg Ser Asp Gly Leu Thr Gly Tyr Gly Gly Tyr His Glu Lys Ser
                805                 810                 815
Tyr Ser Glu Glu Thr Ala Lys Thr Ile Asp Thr Glu Leu Arg Met Leu
    820                 825                 830
Leu Asp Ala Ala Tyr Gln Arg Ala Leu Asp Ile Ile Asn Glu His Lys
    835                 840                 845
Ala Glu Ile Glu Leu Met Thr Gln Met Leu Ile Glu Phe Glu Thr Leu
    850                 855                 860
Asp Ser Lys Asp Val Lys Glu Ile Met Asp His Thr Trp Asp Pro Glu
865                 870                 875                 880
Lys Lys Arg Ala Arg Leu Lys Glu Glu Gly Met Leu Phe Lys Lys Ser
                885                 890                 895
Ser Asp Asp Leu Pro Pro Pro Pro Lys Glu Asp Thr Leu Pro Gly
            900                 905                 910
Leu Gly Phe Asn Ala Thr
        915
```

```
        <400> 1000
Gln Glu Thr Phe Met Asn Phe Gln Thr Ile Ser Ile Asn Leu Thr Glu
1                   5                   10                  15
Gly Lys Ile Leu Val Phe Glu Thr Gly Lys Ile Ala Arg Gln Ala Asn
            20                  25                  30
```

```
Gly Ala Val Leu Val Arg Ser Gly Glu Thr Cys Val Phe Ala Ser Ala
        35                  40                  45
Cys Ala Val Asp Leu Asp Asp Lys Val Asp Phe Leu Pro Leu Arg Val
        50                  55                  60
Asp Tyr Gln Glu Lys Phe Ser Ser Thr Gly Lys Thr Leu Gly Gly Phe
65                  70                  75                      80
Ile Lys Arg Glu Gly Arg Pro Ser Glu Lys Glu Ile Leu Val Ser Arg
                85                  90                  95
Leu Ile Asp Arg Ser Leu Arg Pro Ser Phe Pro Tyr Arg Leu Met Gln
                100                 105                 110
Asp Val Gln Val Leu Ser Tyr Val Trp Ser Tyr Asp Gly Gln Val Leu
                115                 120                 125
Pro Asp Pro Leu Ala Ile Cys Ala Ala Ser Ala Ala Leu Ala Ile Ser
        130                 135                 140
Asp Ile Pro Gln Ser Asn Ile Val Ala Gly Val Arg Ile Gly Cys Ile
145                 150                 155                     160
Asp Asn Gln Trp Val Ile Asn Pro Thr Lys Thr Glu Leu Ala Ser Ser
                165                 170                 175
Thr Leu Asp Leu Val Leu Ala Gly Thr Glu Asn Ala Ile Leu Met Ile
                180                 185                 190
Glu Gly His Cys Asp Phe Phe Thr Glu Glu Gln Val Leu Asp Ala Ile
        195                 200                 205
Glu Phe Gly His Lys His Ile Val Thr Ile Cys Lys Arg Leu Gln Leu
        210                 215                 220
Trp Gln Glu Glu Val Gly Lys Ser Lys Asn Leu Ser Ala Val Tyr Pro
225                 230                 235                     240
Leu Pro Ala Glu Val Leu Thr Ala Val Lys Glu Cys Ala Gln Asp Lys
                245                 250                 255
Phe Thr Glu Leu Phe Asn Ile Lys Asp Lys Lys Val His Ala Ala Thr
                260                 265                 270
Ala His Glu Ile Glu Glu Asn Ile Leu Glu Lys Leu Gln Arg Glu Asp
        275                 280                 285
Asp Asp Leu Phe Ser Ser Phe Asn Ile Lys Ala Ala Cys Lys Thr Leu
        290                 295                 300
Lys Ser Asp Thr Met Arg Ala Leu Ile Arg Asp Arg Glu Ile Arg Ala
305                 310                 315                     320
Asp Gly Arg Ser Leu Thr Thr Val Arg Pro Ile Thr Ile Glu Thr Ser
                325                 330                 335
Tyr Leu Pro Arg Thr His Gly Ser Cys Leu Phe Thr Arg Gly Glu Thr
                340                 345                 350
Gln Thr Leu Ala Val Cys Thr Leu Gly Ser Glu Ala Met Ala Gln Arg
        355                 360                 365
Tyr Glu Asp Leu Asn Gly Glu Gly Leu Ser Lys Phe Tyr Leu Gln Tyr
        370                 375                 380
Phe Phe Pro Pro Phe Ser Val Gly Glu Val Gly Arg Ile Gly Ser Pro
385                 390                 395                     400
Gly Arg Arg Glu Ile Gly His Gly Lys Leu Ala Glu Lys Ala Leu Ser
                405                 410                 415
His Ala Leu Pro Asp Ser Ala Thr Phe Pro Tyr Thr Ile Arg Ile Glu
                420                 425                 430
Ser Asn Ile Thr Glu Ser Asn Gly Ser Ser Ser Met Ala Ser Val Cys
        435                 440                 445
Gly Gly Cys Leu Ala Leu Met Asp Ala Gly Val Pro Ile Ser Ser Pro
        450                 455                 460
Ile Ala Gly Ile Ala Met Gly Leu Ile Leu Asp Asp Gln Gly Ala Ile
465                 470                 475                     480
Ile Leu Ser Asp Ile Ser Gly Leu Glu Asp His Leu Gly Asp Met Asp
                485                 490                 495
Phe Lys Ile Ala Gly Ser Gly Lys Gly Ile Thr Ala Phe Gln Met Asp
                500                 505                 510
```

                            ، 1200

```
Ile Lys Val Glu Gly Ile Thr Pro Ala Ile Met Lys Lys Ala Leu Ser
        515                 520                 525
Gln Ala Lys Gln Gly Cys Asn Asp Ile Leu Asn Ile Met Asn Glu Ala
        530                 535                 540
Leu Ser Ala Pro Lys Ala Asp Leu Ser Gln Tyr Ala Pro Arg Ile Glu
545                 550                 555                 560
Thr Met Gln Ile Lys Pro Thr Lys Ile Ala Ser Val Ile Gly Pro Gly
                565                 570                 575
Gly Lys Gln Ile Arg Gln Ile Ile Glu Glu Thr Gly Val Gln Ile Asp
                580                 585                 590
Val Asn Asp Leu Gly Val Val Ser Ile Ser Ala Ser Ser Ala Ser Ala
        595                 600                 605
Ile Asn Lys Ala Lys Glu Ile Ile Glu Gly Leu Val Gly Glu Val Glu
        610                 615                 620
Val Gly Lys Thr Tyr Arg Gly Arg Val Thr Ser Val Val Ala Phe Gly
625                 630                 635                 640
Ala Phe Val Glu Val Leu Pro Gly Lys Glu Gly Leu Cys His Ile Ser
                645                 650                 655
Glu Cys Ser Arg Gln Arg Ile Glu Asn Ile Ser Asp Val Val Lys Glu
                660                 665                 670
Gly Asp Ile Ile Asp Val Lys Leu Leu Ser Ile Asn Glu Lys Gly Gln
        675                 680                 685
Leu Lys Leu Ser His Lys Ala Thr Leu Glu
        690                 695


        <210> 1001
        <211> 101
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1001
Ser Ala Phe Ala Ala Ile Ile Leu Arg Arg His Pro Met Ser Leu Asp
1                 5                 10                  15
Lys Gly Thr Lys Glu Glu Ile Thr Lys Lys Phe Gln Leu His Glu Lys
                20                  25                  30
Asp Thr Gly Ser Ala Asp Val Gln Ile Ala Ile Leu Thr Glu His Ile
        35                  40                  45
Ala Glu Leu Lys Glu His Leu Lys Arg Ser Pro Lys Asp Gln Asn Ser
        50                  55                  60
Arg Leu Ala Leu Leu Lys Leu Val Gly Gln Arg Arg Lys Leu Leu Glu
65                  70                  75                  80
Tyr Leu Asn Ser Thr Asp Thr Glu Arg Tyr Lys Asn Leu Ile Thr Arg
                85                  90                  95
Leu Asn Leu Arg Lys
                100


        <210> 1002
        <211> 167
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1002
Tyr Tyr Leu Glu Leu Gly Gly Glu Lys Leu Ile Asn Met Glu Lys Asp
1                 5                 10                  15
Ile Phe Phe Met Gln Gln Ala Phe Lys Glu Ala Arg Lys Ala Tyr Asp
                20                  25                  30
Gln Asp Glu Val Pro Val Gly Cys Val Ile Val Lys Asp Asp Lys Ile
        35                  40                  45
Ile Ala Arg Ala His Asn Ser Val Glu Lys Leu Lys Asp Ala Thr Ala
        50                  55                  60
```

1201

His Ala Glu Ile Leu Cys Ile Gly Ser Ala Ala Gln Asp Leu Asp Asn
65   70   75   80
Trp Arg Leu Leu Asp Thr Val Leu Tyr Cys Thr Leu Glu Pro Cys Leu
                85   90   95
Met Cys Ala Gly Ala Ile Gln Leu Ala Arg Ile Pro Arg Ile Val Trp
            100   105   110
Ala Ala Pro Asp Val Arg Leu Gly Ala Gly Gly Ser Trp Val Asn Ile
            115   120   125
Phe Thr Glu Glu His Pro Phe His Thr Val Ser Cys Thr Gly Gly Val
    130   135   140
Cys Ser Glu Glu Ala Glu His Leu Met Lys Lys Phe Phe Val Glu Lys
145   150   155   160
Arg Arg Glu Lys Ser Glu Lys
                165

        <210> 1003
        <211> 82
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1003
Lys Ser Ala Glu Arg Lys Val Lys Asn Lys Ile Val Thr Leu Leu Asp
1   5   10   15
Gln Leu Tyr Glu Asp Gln Glu Ser Arg Leu Gln Lys Leu Gly Glu Glu
                20   25   30
Ile Val Pro Asn Leu Thr Pro Glu Asp Leu Leu Gln Pro Met Asp Phe
            35   40   45
Pro Gln Leu Glu Gly Asn Pro Ala Phe Arg Phe Glu Glu Gly Val Leu
    50   55   60
Ser Gly Ile Gly Glu Val Arg Ala Ala Ile Leu Ala Ala Leu Ser Gln
65   70   75   80
Glu Asn

        <210> 1004
        <211> 257
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1004
Thr Ser Asn Lys Thr Ile His Pro Leu Leu Trp Gly Pro Asp Arg Gln
1   5   10   15
Ile Ala Gly Lys Ala Ser Met Arg Val Ile Phe Pro Asp Lys His Asn
                20   25   30
Asn Phe Pro Asn Leu Ser Lys Leu Leu Lys Lys Leu Pro Ser Val Ile
            35   40   45
Leu Val Thr Ser Cys Ile Ala Pro Phe Phe Ser Tyr Ile Ile Asn Lys
    50   55   60
Phe Phe Gly Ile Pro Gly Leu Leu Glu Ile Leu Ala Leu Ser Val Lys
65   70   75   80
Gly Ile Gln Lys His His Phe Trp Gln Phe Leu Thr Tyr Pro Leu Ile
                85   90   95
Thr Ala Asp Ser Leu Ser Leu Asn Lys Asp Gln Ser Phe Glu Ile Thr
            100   105   110
Gln Arg Leu Leu Leu Arg Asn Val Leu Asp Phe Phe Leu Phe Tyr Lys
    115   120   125
Ala Ile Gln His Leu Ile Arg Lys Leu Gly Ala Phe Ser Val Leu Val
    130   135   140
Val Ile Ser Gly Gln Ala Leu Ile Ile Gly Ala Val Leu Trp Gly Phe
145   150   155   160

1202

Met Ala Leu Ile His Ser Ser Gln Ser Phe Phe Gly Pro Glu Ser Ile
                165   170   175
Ile Cys Gly Val Leu Thr Val Gln Ile Phe Leu Asp Pro Glu Lys Arg
                180   185   190
Phe Thr Ile Gly Pro Thr Pro Leu Ser Val Ser Ile Lys Trp Gly Phe
            195   200   205
Leu Phe Val Leu Gly Phe Tyr Cys Cys Ile Leu Ile Phe Ser Gly Ala
        210   215   220
Phe Leu Leu Leu Leu Ala Ser Met Leu Ala Ile Val Leu Ala Ile Leu
225   230   235   240
Phe Cys Lys Lys Glu Lys Ile Pro Asn Pro Tyr Thr Thr Ser Leu Arg
                245   250   255
Phe

        <210> 1005
        <211> 180
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1005
His Leu Ser Ile Glu Glu Leu Met Ser Ile Gln Pro Val Ser Asn Thr
1   5   10   15
Thr Thr Lys Ala Asp Lys Val Ile Pro Asp Ser Thr Lys Val Ile Ser
            20   25   30
Asp Ser Ile Thr Ile Asn Lys Gln Ser Ala Phe Tyr Phe Cys Ile Ser
        35   40   45
Val Met Leu Arg Leu Ser Glu Ser Thr Thr Glu Tyr Gly Lys Ser Ile
    50   55   60
Leu Ala Val Leu Glu Asp Asn Thr Ile Val Gln Gln Gln Arg Val Lys
65   70   75   80
Glu Leu Ile Asn Leu Pro Leu Leu Lys Val Pro Asp Leu Gln Lys Lys
                85   90   95
Asp Gly Ser Asp Asp Glu Tyr Lys Asn Gln Asn Glu Ile Gln Ala Tyr
            100   105   110
Gln Ser Ser Asn Gln Gln Ile Ser Ala Asn Arg Gln Met Ile Gln Gln
        115   120   125
Glu Leu Ser Ser Ala Gln Gln Arg Ala Gln Ala Asn Gln Lys Ser Val
    130   135   140
Asn Ser Thr Thr Ile Glu Ser Met Gln Ile Leu Gln Ala Thr Ser Ser
145   150   155   160
Met Leu Ser Thr Leu Lys Glu Leu Thr Ile Lys Ala Asn Leu Thr Asn
                165   170   175
Ser Pro Ser Asp
            180

        <210> 1006
        <211> 181
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1006
Asn Arg Lys Pro Val Arg Leu Asn Met Trp Ile Ile Asp Pro Leu Ser
1   5   10   15
Ala Lys Lys Pro Leu Gln Ala Ala Ile Asn Val Pro·Gly Thr Pro Ile
            20   25   30
Thr Gly Gly Pro Asn Thr Ala Thr Ala Asp Asp Ile Ile Ala Lys Phe
        35   40   45
Ser Lys Asp Ser Asn Pro Leu Ile Val Thr Val Tyr Tyr Val Tyr Gln
    50   55   60

Ser Val Leu Val Ala Gln Asp Asn Leu Ser Ile Ile Ala Gln Glu Leu
65   70   75   80
Gln Ala Asn Ser Ser Ala Gln Thr Tyr Leu Asn Asn Gln Glu Ala Leu
                85   90   95
Tyr Gln Tyr Val Ser Ile Pro Lys Asn Lys Leu Asn Asp Asn Ser Ser
            100   105   110
Ser Tyr Leu Gln Asn Ile Gln Ser Asp Asn Gln Ala Ile Gly Ala Ser
        115   120   125
Arg Gln Ala Ile Gln Asn Gln Ile Ser Ser Leu Gly Asn Ala Ala Gln
        130   135   140
Val Ile Ser Ser Asn Leu Asn Thr Asn Asn Asn Ile Ile Gln Gln Ser
145   150   155   160
Leu Gln Val Gly Gln Ala Leu Ile Gln Thr Phe Ser Gln Ile Val Ser
                165   170   175
Leu Ile Ala Asn Ile
                180

        <210> 1007
        <211> 168
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1007
Thr Lys Val Asn Phe Phe Ile Met Ser Ile Thr Thr Leu Gly Thr Leu
1   5   10   15
Pro Thr Val Asn Thr Ile Asn Ser Ser Arg Pro Pro Leu Glu Pro Leu
                20   25   30
Asn Thr Pro Lys Ile Gly Ala Val Leu Phe Ser Ile Tyr Glu Leu Leu
        35   40   45
Leu Gln Ala Ile Glu Ile Arg Gln Gln Thr Val Leu Thr Gln Ser Gln
        50   55   60
Gln Leu Asn Asp Asn Thr Asn Ile Gln Gln Gln Leu Asn Gln Glu Thr
65   70   75   80
Asn Gln Ile Lys Tyr Ala Ile Val Ser Ala Gly Ala Lys Glu Asp Glu
                85   90   95
Ile Thr Arg Val Gln Asn Gln Asn Gln Asn Tyr Ser Ala Gln Arg Ser
                100   105   110
Asn Ile Gln Asp Glu Leu Val Thr Thr Arg Gln Asn Gly Gln Ile Ile
        115   120   125
Leu Ser His Ala Ser Thr Asn Ile Asn Ile Ile Gln Gln Gln Ser Ser
        130   135   140
Gln Asp Ser Ser Phe Ile Lys Thr Thr Asn Ser Ile Gly Ser Thr Val
145   150   155   160
Asn Gln Leu Asn Lys Pro Leu Gly
                165

        <210> 1008
        <211> 73
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1008
Leu Trp Tyr Lys Ser Leu Ala Gly Glu Glu Lys Asp Val Ser Gly Asn
1   5   10   15
Glu Cys Asn Asp Tyr Pro Glu Val Phe Lys Asp Asp Val Ser Ala Tyr
                20   25   30
Val Leu Val Thr Cys Gly Gln Met Ser Ser Glu Gly Lys Ile Gln Val
        35   40   45
Glu Met Thr Tyr Glu Gly Asp Pro Ala Val Ile Ser Tyr Leu Leu Thr
        50   55   60

1204

```
Lys Ala Arg Asp Ser Leu Asp Glu Ser
65                   70

        <210> 1009
        <211> 440
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1009
Val Leu Asn Tyr Ser Phe Ile Gly Met Leu Lys Pro Met Tyr Val Leu
 1               5                  10                  15
Ser Lys Arg Leu Tyr Arg Trp Val Asn Gln Leu Ile Lys Leu Gly Asp
            20                  25                  30
Leu Val Lys Asn Ser Arg Ser Phe Ser Val Glu Trp Val Phe Ile Ser
            35                  40                  45
Ala Leu Leu Leu Ile Phe Gly Cys Leu Gly Cys Ala Ser Val Val Lys
    50                  55                  60
Val Ser Leu Val Pro Phe Leu Leu Leu Phe Ser Phe Leu Ala Phe Pro
65                  70                  75                  80
Leu Ile Leu Cys Phe Arg Gly Lys Gly Tyr Ala Leu Leu Leu Gly Val
                85                  90                  95
Phe Val Thr Leu Tyr Val Ala Lys Tyr Val Val Gly Glu Thr Leu Tyr
            100                 105                 110
Val Ser Phe Trp Leu Ser Gly Leu Gly Val Ser Phe Leu Leu Ala Phe
            115                 120                 125
Gly Leu Phe Leu Gln Gly Val Trp Leu Ala Gln Glu Glu Glu Met Val
    130                 135                 140
Lys Gly Lys Glu Gln Leu Arg Leu Ser Glu Asp Leu Asp Ala Gln Arg
145                 150                 155                 160
Ser Ala Tyr Glu Asp Leu Leu Leu Thr Lys Ser Gln Glu Lys Glu Phe
                165                 170                 175
Leu Asp Ala Arg Ala Gln Gly Leu Asp Arg Glu Leu Thr Glu Cys Gln
            180                 185                 190
Glu Leu Leu Lys Ala Ala Tyr Gln Lys Gln Glu Tyr Leu Thr Ile Asp
            195                 200                 205
Leu Lys Ile Leu Ala Asp Gln Lys Asn Ser Trp Leu Glu Asp Tyr Ala
    210                 215                 220
Glu Leu His Asn Lys Tyr Ile Glu Leu Val Ser Lys Asn Gly Asp Val
225                 230                 235                 240
Val Phe Pro Trp Val Ala Glu Pro Ser Val Gly Glu Ser Gln Gly Ser
                245                 250                 255
Glu Arg Val Asp Val Ser Arg Trp Val Ser Ala Leu Gln Glu Lys Glu
            260                 265                 270
Glu Ser Leu Glu Arg Leu Arg Asn Glu Ile Leu Val Glu Lys Gln Arg
            275                 280                 285
Cys Ser Asp Tyr Glu His Arg Cys Gln Glu Leu Gly Leu Leu Leu Gln
    290                 295                 300
Asn Phe Thr Ala Leu Glu Arg Arg Cys Glu Glu Leu Gln Asn Leu Leu
305                 310                 315                 320
Asn Gln Lys Glu Thr Gln Ile Asn Glu Leu His Gln Leu Val Cys Lys
            325                 330                 335
Ser Glu Glu Lys Val Ser Val Glu Pro Ser Ala His Ala Glu Thr Ser
            340                 345                 350
Cys Val Glu Glu Lys Gln Tyr Lys Gly Leu Tyr Ser Gln Leu Gln Glu
    355                 360                 365
Gln Phe Leu Glu Lys Ser Glu Thr Leu Ser Leu Val Arg Lys Lys Leu
    370                 375                 380
Phe Ala Val Gln Glu Lys Tyr Leu Thr Leu Lys Lys Lys Glu Glu Leu
385                 390                 395                 400
Thr Lys Gln Asp Ile Ser Phe Asp Asp Ile Ser Met Ile Gln Gly Leu
            405                 410                 415
```

1205

Leu Glu Arg Ile Glu Ile Leu Glu Glu Glu Val Ser His Leu Glu Glu
          420   425   430
Leu Val Ser Arg Ser Leu Ser Leu
          435   440

          <210> 1010
          <211> 300
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1010
Tyr Arg Leu Leu His Arg Val Ile Leu Met Lys Arg Asn Asp Pro Cys
1   5   10   15
Trp Cys Gly Ser Gly Arg Lys Trp Lys Gln Cys His Tyr Pro Gln Pro
          20   25   30
Pro Lys Met Ser Pro Glu Ala Leu Lys Gln His Tyr Ala Ser Gln Tyr
          35   40   45
Asn Ile Leu Leu Lys Thr Pro Glu Gln Lys Ala Lys Ile Tyr Asn Ala
          50   55   60
Cys Gln Ile Thr Ala Arg Ile Leu Asp Glu Leu Cys Lys Ala Ser Gln
65   70   75   80
Lys Gly Val Thr Thr Asn Glu Leu Asp Glu Leu Ser Gln Glu Leu His
          85   90   95
Lys Lys Tyr Asp Ala Ile Ala Ala Pro Phe His Tyr Gly Ser Pro Pro
          100   105   110
Phe Pro Lys Thr Ile Cys Thr Ser Leu Asn Glu Val Ile Cys His Gly
          115   120   125
Ile Pro Asn Asp Ile Pro Leu Lys Asp Gly Asp Ile Met Asn Ile Asp
          130   135   140
Val Ser Cys Ile Val Asp Gly Tyr Tyr Gly Asp Cys Ser Arg Met Val
145   150   155   160
Met Ile Gly Glu Val Pro Glu Ile Lys Lys Lys Ile Cys Gln Ala Ala
          165   170   175
Leu Glu Cys Leu Asn Asp Ser Ile Ala Ile Leu Lys Pro Gly Ile Pro
          180   185   190
Leu Cys Glu Ile Gly Glu Ala Ile Glu Ala Arg Ala Asp Thr Tyr Gly
          195   200   205
Phe Ser Val Val Asp Gln Phe Val Gly His Gly Val Gly Ile Glu Phe
          210   215   220
His Glu Asn Pro Tyr Val Pro His Tyr Arg Asn Arg Ser Met Ile Pro
225   230   235   240
Leu Ala Pro Gly Met Ile Phe Thr Ile Glu Pro Met Ile Asn Val Gly
          245   250   255
Lys Lys Glu Gly Val Val Asp Pro Lys Asn Gln Trp Glu Ala Arg Thr
          260   265   270
Cys Asp Asn Gln Pro Ser Ala Gln Trp Glu His Thr Ile Ala Ile Thr
          275   280   285
Glu Thr Gly Tyr Glu Ile Leu Thr Leu Leu Asn Asp
          290   295   300

          <210> 1011
          <211> 203
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1011
Val Met Leu Ile Leu Leu Asn Leu Ser Leu Leu Phe Tyr Val Leu Phe
1   5   10   15
Asp Ser Pro Gly Ser Ile Pro Val Phe Val Ala Leu Leu Lys Asn Phe
          20   25   30

1206

Ser Arg Lys Lys Gln Gln Arg Val Ile Leu Arg Glu Cys Leu Phe Ala
        35   40   45
Leu Gly Ala Leu Ile Leu Phe Val Thr Phe Gly Arg Ser Phe Phe Gln
        50   55   60
Phe Leu Asp Ile Ser Leu Tyr Ala Phe Gln Ile Ile Gly Gly Phe Leu
65   70   75   80
Leu Phe Thr Val Ser Ile Lys Met Met Leu Ala Pro Met Pro Glu Lys
            85   90   95
Ala Lys Asp Asp Thr Ser Lys Thr Glu Pro Ile Phe Phe Pro Leu Ala
        100   105   110
Phe Pro Val Ile Thr Gly Pro Ala Val Ile Thr Ala Leu Leu Ser Tyr
        115   120   125
Met Glu Glu Gly Ile Tyr Ser Arg Glu Ile Ile Phe Thr Ala Met Ile
    130   135   140
Ile Ala Trp Ala Phe Ser Leu Phe Thr Leu Leu Cys Ser Ser Phe Phe
145   150   155   160
Asp Arg Leu Phe Gly Asn Phe Gly Leu Leu Ala Leu Glu Arg Leu Phe
            165   170   175
Gly Ile Ala Leu Leu Leu Met Ser Val Asn Leu Met Leu Lys Gly Ile
            180   185   190
Ser Ile Ala Phe Asn Ile Gly Phe Tyr Ile Gly
        195   200

        <210> 1012
        <211> 136
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1012
Glu Met Arg Leu Lys Asn Tyr Pro Met Ile Gln Phe Ser Phe Phe Leu
1   5   10   15
Pro Gln Thr Cys Ile Leu Leu Leu Ala Ser Asp Ser Leu Thr Asn Ile
            20   25   30
Leu Ala Leu His His Leu Leu Ala Asn Tyr Ser Val Lys Gln Arg Met
        35   40   45
Leu Val Leu Leu Arg Glu Ser Phe Phe Ala Phe Ile Ala Met Phe Ala
        50   55   60
Leu Tyr Gly Leu Ala Leu Gly Gly Leu Lys Val Leu Asn Thr Pro Val
65   70   75   80
Cys Ala Ile Glu Val Val Gly Gly Ile Ala Val Thr Leu Ala Gly Val
            85   90   95
Arg Ala Val Leu Arg Leu Gly Lys Glu Glu Ser Trp Ile Pro Tyr Lys
        100   105   110
Phe Asn Met Ser Pro Ser Tyr Ser Pro Cys Ile Ser Pro Ile Ala Leu
        115   120   125
Pro Leu Met Phe Gly Pro Ser Gly
130   135

        <210> 1013
        <211> 600
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1013
Ala Ile Phe Ser Leu Ile Thr Ser Lys Met Lys Lys Lys Phe Ile Phe
1   5   10   15
Tyr Phe Val Ile Val Phe Ser Leu Leu Phe Leu Trp Glu Met Thr Ser
            20   25   30
Arg His Arg Pro Thr Phe Ser Phe Phe Cys Pro Pro Pro Ser Ser Ile
        35   .   40   45

1207

```
Ala Ser Ser Thr Leu Gln Ser Leu Pro Leu Leu Leu Thr Ser Ala Trp
    50              55                  60
His Thr Leu Lys Ala Ile Leu Gly Gly Phe Phe Leu Ala Ile Thr Leu
65              70                  75                      80
Ser Ile Val Leu Ala Thr Ile Met Leu Ser Tyr Lys Ser Ala Lys Asp
                85                  90                  95
Leu Leu Gln Pro Leu Phe Ile Leu Leu Gln Cys Thr Pro Met Phe Ala
            100              105                  110
Leu Ala Pro Leu Ile Val Leu Trp Phe Gly Trp Gly Ile Gly Ala Val
            115              120                  125
Ile Val Pro Thr Ala Leu Thr Ile Phe Phe Pro Leu Thr Leu Thr Ile
        130              135                  140
Tyr Gln Gly Ile Leu Ser Thr Pro Glu Glu Leu Ile Glu Gln Phe Val
145              150                  155                      160
Leu Cys Gly Ala Thr Lys Phe Gln Leu Leu Ile Lys Leu Arg Ile Pro
            165              170                  175
His Ala Leu Pro His Ile Phe Ser Gly Leu Lys Ile Ala Ile Gly Ser
            180              185                  190
Ala Gly Phe Ala Ala Ile Ala Gly Glu Trp Val Ala Ser Gln Ser Gly
            195              200                  205
Leu Gly Ile Leu Met Leu Glu Ser Arg Arg Asn Tyr Glu Met Glu Leu
    210              215                  220
Ala Phe Ala Gly Leu Ala Thr Leu Ser Ile Leu Thr Leu Ser Leu Phe
225              230                  235                      240
Gln Ile Thr Leu Leu Ile Glu Lys Leu Ile Phe Ser Leu Phe Arg Val
            245                  250                  255
Lys Arg Met Ser Leu Lys His Lys Ser Val Ala Lys Lys Ala Leu Ser
            260                  265                  270
Val Leu Ala Leu Ile Pro Ile Met Leu Ile Pro Trp Lys Gly Asn Ser
            275              280                  285
Lys Ser Pro Pro Asp Lys Lys Asn Leu Thr Ser Leu Thr Leu Leu Leu
    290              295                  300
Asp Trp Thr Pro Asn Pro Asn His Ile Pro Leu Tyr Ala Gly Val Ala
305              310                  315                      320
Lys Gly Tyr Phe Lys Gln His Gly Leu Asp Leu Gln Leu Gln Lys Asn
            325                  330                  335
Thr Asp Ser Ser Ser Ala Val Pro His Val Leu Phe Glu Gln Val Asp
            340              345                  350
Met Ala Leu Tyr His Ala Leu Gly Ile Met Lys Thr Ser Ile Lys Gly
    355              360                  365
Met Pro Ile Gln Ile Val Gly Arg Leu Ile Asp Ser Ser Leu Gln Gly
    370              375                  380
Phe Leu Tyr Arg Ser Gln Asp Pro Ile Tyr Lys Phe Glu Asp Leu Asn
385              390                  395                      400
Gly Lys Val Leu Gly Phe Cys Leu Asn Asn Ser Arg Asp Leu Asn Arg
            405              410                      415
Leu Leu Glu Thr Leu Asn Arg Asn Gly Val Val Pro Ser Glu Val Lys
            420              425                  430
Asn Val Ser Ser Asp Leu Ile Ser Pro Met Leu Leu Asn Lys Ile Asp
            435              440                  445
Phe Leu Tyr Gly Ala Phe Tyr Asn Ile Glu Gly Val Lys Leu Gln Thr
    450              455                  460
Leu Gly Met Pro Val Lys Cys Phe Leu Ser Asp Thr Cys Asp Leu Pro
465              470                  475                      480
Thr Gly Pro Gln Leu Ile Val Phe Thr Lys Lys Gly Thr Lys Ala Ser
            485                  490                  495
Glu Pro Glu Ile Val Glu Ala Phe Gln Lys Ala Leu Gln Glu Ser Ile
            500                  505                  510
Ile Phe Ser Lys Asp His Pro Glu Asp Ala Phe Lys Leu Tyr Ala Lys
    515                  520                  525
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1208

```
Glu Thr Lys Ser Ile Pro Lys Asn Leu Tyr Gln Glu Tyr Leu Gln Trp
    530                 535                 540
Glu Glu Thr Phe Pro Leu Leu Ala Gln Ser Gln Asp Pro Leu Ser Lys
545                 550                 555                 560
Asp Leu Val Asp Lys Leu Leu Glu Thr Ile Ile Lys Arg Tyr Pro Glu
                565                 570                 575
Leu Ala Ser Glu Val Ala Lys Phe Ser Leu Asn Asp Leu Tyr Asn Pro
                580                 585                 590
Ser Leu Pro Glu Glu Gln Ser Val
        595                 600


        <210> 1014
        <211> 472
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1014
Arg Glu Asn Ser Leu Asn His Arg Gly Asn Ile Asp Met Arg Gln Glu
1               5                   10                  15
Lys Asp Ser Leu Gly Ile Val Glu Val Pro Glu Asp Lys Leu Tyr Gly
        20                  25                  30
Ala Gln Thr Met Arg Ser Arg Asn Phe Phe Ser Trp Gly Pro Glu Leu
        35                  40                  45
Met Pro Tyr Glu Val Ile Arg Ala Leu Val Trp Ile Lys Lys Cys Ala
    50                  55                  60
Ala Gln Ala Asn Gln Asp Leu Gly Phe Leu Asp Ser Lys His Cys Asp
65                  70                  75                  80
Met Ile Val Ala Ala Ala Asp Glu Ile Leu Glu Gly Gly Phe Glu Glu
                85                  90                  95
His Phe Pro Leu Lys Val Trp Gln Thr Gly Ser Gly Thr Gln Ser Asn
            100                 105                 110
Met Asn Val Asn Glu Val Ile Ala Asn Leu Ala Ile Arg His His Gly
        115                 120                 125
Gly Val Leu Gly Ser Lys Asp Pro Ile His Pro Asn Asp His Val Asn
    130                 135                 140
Lys Ser Gln Ser Ser Asn Asp Val Phe Pro Thr Ala Met His Ile Ala
145                 150                 155                 160
Ala Val Ile Ser Leu Lys Asn Lys Leu Ile Pro Ala Leu Asp His Met
                165                 170                 175
Ile Arg Val Leu Asp Ala Lys Val Glu Glu Phe Arg His Asp Val Lys
            180                 185                 190
Ile Gly Arg Thr His Leu Met Asp Ala Val Pro Met Thr Leu Gly Gln
        195                 200                 205
Glu Phe Ser Gly Tyr Ser Ser Gln Leu Arg His Cys Leu Glu Ser Ile
    210                 215                 220
Ala Phe Ser Leu Ala His Leu Tyr Glu Leu Ala Ile Gly Ala Thr Ala
225                 230                 235                 240
Val Gly Thr Gly Leu Asn Val Pro Glu Gly Phe Val Glu Lys Ile Ile
                245                 250                 255
His Tyr Leu Arg Lys Glu Thr Asp Glu Pro Phe Ile Pro Ala Ser Asn
            260                 265                 270
Tyr Phe Ser Ala Leu Ser Cys His Asp Ala Leu Val Asp Ala His Gly
        275                 280                 285
Ser Leu Ala Thr Leu Ala Cys Ala Leu Thr Lys Ile Ala Thr Asp Leu
    290                 295                 300
Ser Phe Leu Gly Ser Gly Pro Arg Cys Gly Leu Gly Glu Leu Phe Phe
305                 310                 315                 320
Pro Glu Asn Glu Pro Gly Ser Ser Ile Met Pro Gly Lys Val Asn Pro
                325                 330                 335
Thr Gln Cys Glu Ala Leu Gln Met Val Cys Ala Gln Val Leu Gly Asn
            340                 345                 350
```

Asn Gln Thr Val Ile Ile Gly Gly Ser Arg Gly Asn Phe Glu Leu Asn
        355   360   365
Val Met Lys Pro Val Ile Ile Tyr Asn Phe Leu Gln Ser Val Asp Leu
        370   375   380
Leu Ser Glu Gly Met Arg Ala Phe Ser Glu Phe Phe Val Lys Gly Leu
385   390   395   400
Lys Val Asn Lys Ala Arg Leu Gln Asp Asn Ile Asn Asn Ser Leu Met
                405   410   415
Leu Val Thr Ala Leu Ala Pro Val Leu Gly Tyr Asp Lys Cys Ser Lys
        420   425   430
Ala Ala Leu Lys Ala Phe His Glu Ser Ile Ser Leu Lys Glu Ala Cys
        435   440   445
Leu Ala Leu Gly Tyr Leu Ser Glu Lys Glu Phe Asp Arg Leu Val Val
        450   455   460
Pro Glu Asn Met Val Gly Asn His
465   470

        <210> 1015
        <211> 575
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1015
Ala Leu Ala Ser Thr Leu Gly Tyr Cys Ile Val Lys Val Pro Trp Ala
1   5   10   15
Phe Lys Asn Phe Ile Pro Lys Leu Tyr Thr Ser Ile Lys Glu Gly Tyr
                20   25   30
Ser Phe Asn Thr Phe Lys Lys Asp Phe Gln Ala Gly Ile Thr Val Gly
                35   40   45
Ile Leu Ala Phe Pro Phe Ala Ile Ala Ile Ala Ile Gly Val Gly Val
        50   55   60
Ser Pro Ile Gln Gly Leu Leu Ala Ser Ile Ile Gly Gly Leu Leu Ala
65   70   75   80
Ser Ala Met Gly Gly Ser Asn Val Leu Ile Ser Gly Pro Ser Ser Ala
                85   90   95
Phe Ile Ser Ile Leu Tyr Cys Leu Ser Ala Lys Tyr Gly Ala Glu Ala
                100   105   110
Leu Phe Thr Val Thr Leu Leu Ala Gly Val Phe Leu Ile Ala Phe Gly
        115   120   125
Leu Thr Gly Leu Gly Thr Phe Ile Lys Tyr Met Pro Tyr Pro Val Val
        130   135   140
Thr Gly Leu Thr Thr Gly Leu Ala Ile Ile Ile Phe Ser Ser Gln Ile
145   150   155   160
Lys Asp Phe Leu Gly Leu Gln Met Gly Ala Asn Ile Pro Ala Asp Phe
                165   170   175
Leu Pro Lys Trp Ile Ala Tyr Trp Asp His Leu Trp Thr Trp Asp Ser
                180   185   190
Lys Ser Phe Ala Val Gly Leu Phe Thr Leu Leu Ile Met Ile Tyr Phe
                195   200   205
Arg Asn Tyr Lys Pro Arg Tyr Pro Gly Val Met Ile Ala Ile Val Thr
        210   215   220
Ala Thr Thr Leu Val Trp Leu Leu Lys Ile Asp Ile Pro Thr Ile Gly
225   230   235   240
Ser Arg Tyr Gly Thr Leu Pro Thr Ala Ile Pro Leu Pro Lys Ile Pro
                245   250   255
Gln Leu Ser Ile Thr Lys Ile Leu Gln Leu Met Pro Asp Ala Leu Thr
                260   265   270
Ile Ala Val Leu Ser Gly Leu Glu Thr Leu Leu Ser Ala Val Val Ala
        275   280   285
Asp Gly Met Thr Gly Trp Arg His Gln Ser Asn Cys Gln Leu Val Ala
        290   295   300

1210

```
Gln Gly Val Ala Asn Ile Gly Thr Ser Leu Phe Ser Gly Ile Pro Val
305                 310                 315                 320
Thr Gly Ser Leu Ser Arg Thr Ala Ala Ser Ile Lys Ser Glu Ala Thr
                325                 330                 335
Thr Pro Ile Ala Gly Ile Val His Ser Ile Phe Ile Cys Phe Ile Leu
            340                 345                 350
Leu Leu Leu Ala Pro Leu Thr Val Lys Ile Pro Leu Thr Cys Leu Ala
        355                 360                 365
Ala Val Leu Ile Leu Ile Ala Trp Asn Met Ser Glu Ile His His Phe
    370                 375                 380
Ile His Leu Phe Thr Ala Pro Lys Lys Asp Ile Val Val Leu Leu Thr
385                 390                 395                 400
Val Phe Ile Leu Thr Val Met Thr Thr Ile Thr Ala Ala Val Gln Val
            405                 410                 415
Gly Met Met Leu Ala Ala Phe Leu Phe Met Lys Gln Met Ser Asp Leu
        420                 425                 430
Ser Asp Val Ile Ser Thr Ala Lys Tyr Phe Asp Lys Asp Ser Asp Phe
    435                 440                 445
Leu Ser Lys Ala Glu Val Pro Gln Asn Thr Glu Ile Tyr Glu Ile Asn
    450                 455                 460
Gly Pro Phe Phe Phe Gly Ile Ala Asp Arg Leu Lys Asn Leu Leu Asn
465                 470                 475                 480
Asp Ile Glu Lys Pro Pro Lys Ile Phe Ile Leu Cys Met Thr Arg Val
            485                 490                 495
Pro Thr Ile Asp Ala Ser Ala Met His Ala Leu Glu Glu Phe Phe Leu
            500                 505                 510
Glu Cys Asp Arg Gln Gly Thr Leu Leu Leu Leu Ala Gly Val Lys Lys
        515                 520                 525
Thr Pro Leu Ala Asp Leu Lys Arg Tyr His Leu Asp Glu Leu Ile Gly
    530                 535                 540
Val Asp His Ile Phe Ser Asn Ile Lys Ser Ala Leu Leu Phe Ala Gln
545                 550                 555                 560
Ala Leu Thr Asn Leu Glu Ser Lys Thr Ser Thr Arg His Leu Val
                565                 570                 575

        <210> 1016
        <211> 448
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1016
Lys Asn Asn Tyr Lys Asn Phe Ser Phe Phe Thr Ser Val Arg Val Arg
1                 5                   10                  15
Ser Lys Val Asp His Glu Ile Ile Leu Glu Val Thr Met Leu Lys Leu
            20                  25                  30
Gln Leu Cys Ala Leu Phe Leu Phe Gly Tyr Leu Ala Ile Val Phe Glu
        35                  40                  45
His Ile Val Arg Val Asn Lys Ser Ala Ile Ala Leu Ala Met Gly Gly
    50                  55                  60
Leu Met Trp Leu Val Cys Phe Ser His Ile Pro Met Ala Asp His Met
65                  70                  75                  80
Ile Leu Val Glu Glu Ile Ala Asp Met Ser Gln Val Ile Phe Phe Leu
                85                  90                  95
Phe Ser Ala Met Ala Ile Val Glu Leu Ile Asp Ala His Lys Gly Phe
        100                 105                 110
Ser Val Ile Val Lys Phe Cys Arg Ile Gln Ser Arg Thr Leu Leu Leu
    115                 120                 125
Trp Ala Leu Ile Gly Leu Ser Phe Phe Leu Ser Ala Ala Leu Asp Asn
    130                 135                 140
Leu Thr Ser Ile Ile Ile Ile Ile Ser Ile Leu Lys Arg Leu Val Lys
145                 150                 155                 160
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```
Ala Arg Glu Asp Arg Leu Leu Leu Gly Ala Ile Cys Val Ile Ala Val
            165                 170                 175
Asn Ala Gly Gly Ala Trp Thr Pro Leu Gly Asp Val Thr Thr Thr Met
            180                 185                 190
Leu Trp Ile Asn Asn Lys Ile Thr Ser Trp Gly Ile Ile Arg Ala Leu
            195                 200                 205
Phe Val Pro Ser Leu Val Cys Val Leu Val Ala Gly Phe Cys Gly Gln
            210                 215                 220
Phe Phe Leu Arg Lys Arg Gly Ser Thr Leu Ile Ala Lys Asp Val Glu
225                 230                 235                 240
Leu Gln Ser Ala Pro Pro Lys Ser Leu Trp Ile Ile Phe Ile Gly Leu
            245                 250                 255
Gly Ser Leu Leu Met Val Pro Val Trp Lys Ala Cys Leu Gly Leu Pro
            260                 265                 270
Pro Phe Met Gly Ala Leu Leu Gly Leu Gly Leu Val Trp Leu Thr Ser
            275                 280                 285
Asp Trp Ile His Ser Pro His Gly Glu Asp Arg Tyr His Leu Arg Val
            290                 295                 300
Pro His Ile Leu Thr Lys Ile Asp Ile Ser Ser Ile Thr Phe Phe Ile
305                 310                 315                 320
Gly Ile Leu Leu Ala Val Asn Ala Leu Ser Phe Ala Asn Leu Leu Thr
            325                 330                 335
Asp Phe Ser Leu Trp Met Asp Lys Ile Phe Ser Arg Asn Val Val Ala
            340                 345                 350
Ile Val Ile Gly Leu Leu Ser Ser Val Leu Asp Asn Val Pro Leu Val
            355                 360                 365
Ala Ala Thr Met Gly Met Tyr Thr Leu Pro Leu Asp Asp Thr Leu Trp
370                 375                 380
Lys Leu Ile Ala Tyr Ala Ala Gly Thr Gly Gly Ser Ile Leu Ile Ile
385                 390                 395                 400
Gly Ser Ala Ala Gly Val Ala Phe Met Gly Leu Glu Lys Val Asp Phe
            405                 410                 415
Leu Trp Tyr Phe Lys Arg Ile Ser Trp Ile Ala Leu Ala Ser Tyr Phe
            420                 425                 430
Gly Gly Leu Phe Ser Tyr Phe Val Leu Glu Ser Leu Asn Phe Phe Ile
            435                 440                 445
```

        <210> 1017
        <211> 624
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1017
```
Lys Arg Glu Val Phe Met Lys Lys Gly Lys Leu Gly Ala Ile Val Phe
1                   5                   10                  15
Gly Leu Leu Phe Thr Ser Ser Val Ala Gly Phe Ser Lys Asp Leu Thr
            20                  25                  30
Lys Asp Asn Ala Tyr Gln Asp Leu Asn Val Ile Glu His Leu Ile Ser
            35                  40                  45
Leu Lys Tyr Ala Pro Leu Pro Trp Lys Glu Leu Leu Phe Gly Trp Asp
            50                  55                  60
Leu Ser Gln Gln Thr Gln Gln Ala Arg Leu Gln Leu Val Leu Glu Glu
65                  70                  75                  80
Lys Pro Thr Thr Asn Tyr Cys Gln Lys Val Leu Ser Asn Tyr Val Arg
            85                  90                  95
Ser Leu Asn Asp Tyr His Ala Gly Ile Thr Phe Tyr Arg Thr Glu Ser
            100                 105                 110
Ala Tyr Ile Pro Tyr Val Leu Lys Leu Ser Glu Asp Gly His Val Phe
            115                 120                 125
Val Val Asp Val Gln Thr Ser Gln Gly Asp Ile Tyr Leu Gly Asp Glu
            130                 135                 140
```

1212

```
Ile Leu Glu Val Asp Gly Met Gly Ile Arg Glu Ala Ile Glu Ser Leu
145                 150                 155                 160
Arg Phe Gly Arg Gly Ser Ala Thr Asp Tyr Ser Ala Ala Val Arg Ser
                165                 170                 175
Leu Thr Ser Arg Ser Ala Ala Phe Gly Asp Ala Val Pro Ser Gly Ile
            180                 185                 190
Ala Met Leu Lys Leu Arg Arg Pro Ser Gly Leu Ile Arg Ser Thr Pro
        195                 200                 205
Val Arg Trp Arg Tyr Thr Pro Glu His Ile Gly Asp Phe Ser Leu Val
    210                 215                 220
Ala Pro Leu Ile Pro Glu His Lys Pro Gln Leu Pro Thr Gln Ser Cys
225                 230                 235                 240
Val Leu Phe Arg Ser Gly Val Asn Ser Gln Ser Ser Ser Ser Ser Leu
                245                 250                 255
Phe Ser Ser Tyr Met Val Pro Tyr Phe Trp Glu Glu Leu Arg Val Gln
            260                 265                 270
Asn Lys Gln Arg Phe Asp Ser Asn His His Ile Gly Ser Arg Asn Gly
        275                 280                 285
Phe Leu Pro Thr Phe Gly Pro Ile Leu Trp Glu Gln Asp Lys Gly Pro
    290                 295                 300
Tyr Arg Ser Tyr Ile Phe Lys Ala Lys Asp Ser Gln Gly Asn Pro His
305                 310                 315                 320
Arg Ile Gly Phe Leu Arg Ile Ser Ser Tyr Val Trp Thr Asp Leu Glu
                325                 330                 335
Gly Leu Glu Glu Asp His Lys Asp Ser Pro Trp Glu Leu Phe Gly Glu
            340                 345                 350
Ile Ile Asp His Leu Glu Lys Glu Thr Asp Ala Leu Ile Ile Asp Gln
        355                 360                 365
Thr His Asn Pro Gly Gly Ser Val Phe Tyr Leu Tyr Ser Leu Leu Ser
    370                 375                 380
Met Leu Thr Asp His Pro Leu Asp Thr Pro Lys His Arg Met Ile Phe
385                 390                 395                 400
Thr Gln Asp Glu Val Ser Ser Ala Leu His Trp Gln Asp Leu Leu Glu
                405                 410                 415
Asp Val Phe Thr Asp Glu Gln Ala Val Ala Val Leu Gly Glu Thr Met
            420                 425                 430
Glu Gly Tyr Cys Met Asp Met His Ala Val Ala Ser Leu Gln Asn Phe
        435                 440                 445
Ser Gln Ser Val Leu Ser Ser Trp Val Ser Gly Asp Ile Asn Leu Ser
    450                 455                 460
Lys Pro Met Pro Leu Leu Gly Phe Ala Gln Val Arg Pro His Pro Lys
465                 470                 475                 480
His Gln Tyr Thr Lys Pro Leu Phe Met Leu Ile Asp Glu Asp Asp Phe
                485                 490                 495
Ser Cys Gly Asp Leu Ala Pro Ala Ile Leu Lys Asp Asn Gly Arg Ala
            500                 505                 510
Thr Leu Ile Gly Lys Pro Thr Ala Gly Ala Gly Gly Phe Val Phe Gln
        515                 520                 525
Val Thr Phe Pro Asn Arg Ser Gly Ile Lys Gly Leu Ser Leu Thr Gly
    530                 535                 540
Ser Leu Ala Val Arg Lys Asp Gly Glu Phe Ile Glu Asn Leu Gly Val
545                 550                 555                 560
Ala Pro His Ile Asp Leu Gly Phe Thr Ser Arg Asp Leu Gln Thr Ser
                565                 570                 575
Arg Phe Thr Asp Tyr Val Glu Ala Val Lys Thr Ile Val Leu Thr Ser
            580                 585                 590
Leu Ser Glu Asn Ala Lys Lys Ser Glu Glu Gln Thr Ser Pro Gln Glu
        595                 600                 605
Thr Pro Glu Val Ile Arg Val Ser Tyr Pro Thr Thr Thr Ser Ala Ser
    610                 615                 620
```

<210> 1018
<211> 313
<212> PRT
<213> Chlamydia pneumoniae

<400> 1018
Val Ile Ile Met Arg Lys Leu Ile Leu Cys Asn Pro Arg Gly Phe Cys
1   5   10   15
Ser Gly Val Val Arg Ala Ile Gln Val Val Glu Val Ala Leu Glu Lys
            20   25   30
Trp Gly Ala Pro Ile Tyr Val Lys His Glu Ile Val His Asn Arg His
        35   40   45
Val Val Asn Ala Leu Arg Ala Lys Gly Ala Ile Phe Val Glu Glu Leu
    50   55   60
Val Asp Val Pro Glu Gly Glu Arg Val Ile Tyr Ser Ala His Gly Ile
65   70   75   80
Pro Pro Ser Val Arg Ala Glu Ala Lys Ala Arg Lys Leu Ile Asp Ile
                85   90   95
Asp Ala Thr Cys Gly Leu Val Thr Lys Val His Ser Ala Ala Lys Leu
            100   105   110
Tyr Ala Ser Lys Gly Tyr Lys Ile Ile Leu Ile Gly His Lys Lys His
        115   120   125
Val Glu Val Ile Gly Ile Val Gly Glu Val Pro Glu His Ile Thr Val
    130   135   140
Val Glu Lys Val Ala Asp Val Glu Ala Leu Pro Phe Ser Ser Asp Thr
145   150   155   160
Pro Leu Phe Tyr Ile Thr Gln Thr Thr Leu Ser Leu Asp Asp Val Gln
                165   170   175
Glu Ile Ser Ser Ala Leu Leu Lys Arg Tyr Pro Ser Ile Ile Thr Leu
            180   185   190
Pro Ser Ser Ser Ile Cys Tyr Ala Thr Thr Asn Arg Gln Lys Ala Leu
            195   200   205
Arg Ser Val Leu Ser Arg Val Asn Tyr Val Tyr Val Val Gly Asp Val
    210   215   220
Asn Ser Ser Asn Ser Asn Arg Leu Arg Glu Val Ala Leu Arg Arg Gly
225   230   235   240
Val Pro Ala Asp Leu Ile Asn Asn Pro Glu Asp Ile Asp Thr Asn Ile
                245   250   255
Val Asn His Ser Gly Asp Ile Ala Met Thr Ala Gly Ala Ser Thr Pro
            260   265   270
Glu Asp Val Val Gln Ala Cys Ile Arg Lys Leu Ser Ser Leu Ile Pro
    275   280   285
Gly Leu Gln Val Glu Asn Asp Ile Phe Ala Val Glu Asp Val Val Phe
    290   295   300
Gln Leu Pro Lys Glu Leu Arg Cys Ser
305   310

<210> 1019
<211> 245
<212> PRT
<213> Chlamydia pneumoniae

<400> 1019
Arg Met Ser Tyr Phe Asn Tyr Gln Lys Asn Ser Val Val Leu Arg Ser
1   5   10   15
Leu Gly Leu Leu Ala Lys Phe Phe Ser Arg Leu Leu Tyr Arg Val Phe
            20   25   30
Phe Ser Phe Arg Glu Gly Ile Tyr Leu Phe Ser Ser Leu Tyr Leu Lys
        35   40   45
Tyr Pro Arg Leu Phe Phe Tyr Asp Leu Gly Lys Tyr Val Tyr Ser Leu
    50   55   60

1214

Arg His Cys Pro Tyr Ala Lys Leu Gly Arg Leu Pro Gly Ala Ser Leu
65   70   75   80
Leu Lys Glu Gly Asn Val Tyr Gly Glu Thr Pro Trp Ser Val Leu Ala
                85   90   95
Lys Ile Cys Gln Ala Phe Asp Ile Thr Ser Gln Asp Ile Leu Tyr Asp
            100   105   110
Leu Gly Cys Gly Leu Gly Lys Val Cys Phe Trp Phe Ser His Val Val
            115   120   125
Arg Cys Gln Val Ile Gly Ile Asp Asn Gln Pro His Phe Ile Arg Phe
        130   135   140
Ser Ser Asn Met His Arg Lys Leu Ser Ser Gly Phe Ala Leu Phe Asp
145   150   155   160
Thr Glu Glu Phe Lys Asn Val Val Leu Ser Gln Ala Ser Tyr Val Tyr
                165   170   175
Phe Tyr Gly Ser Ser Phe Ser Arg Arg Leu Leu Asn Glu Ile Ile Leu
            180   185   190
Lys Leu Ser Glu Met Ala Pro Gly Ser Val Val Ile Ser Ile Ser Phe
            195   200   205
Pro Leu Asp Ser Phe Ser Arg Gly Lys Glu Cys Phe Phe Thr Glu Lys
    210   215   220
Ser Cys Ser Val Arg Phe Pro Trp Gly Lys Thr Ile Ala Tyr Lys Asn
225   230   235   240
Ile Arg Lys Gly Ser
                245

        <210> 1020
        <211> 503
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1020
Ile His Arg Arg Asn Ile Met Thr Val Ser Tyr Gln Ser Ile Ser Thr
 1   5   10   15
Pro Pro Pro Glu Gly Glu Phe Asp Ile Phe Val Asp Gly Asn Ala Thr
            20   25   30
Glu Glu Ala Val Val Ala Ala Glu Val Gln Val Ala Leu Pro Ala Gly
        35   40   45
Glu Gln Tyr Ala Met Leu Arg Ala Thr Ser Glu Leu Cys Phe Gly Ile
    50   55   60
Leu Thr Gln Ser Glu Cys Ala Leu Thr Gln Ala Leu Pro Pro Lys Glu
65   70   75   80
Lys Pro Leu Gln Glu Glu Gln Phe Leu Val Lys Asn Gly Ile Leu Met
                85   90   95
Arg Ser Thr Ser Leu Pro Asn Leu Lys Pro Gly Gln Ser Gln Gln Thr
            100   105   110
Ser Leu Ala Ser His Arg Asn Pro Leu Ala Gln Gln Ser Thr Ser Ser
        115   120   125
Asn Ser Thr Gly Lys Ala Ser Thr Glu Thr Thr Ser Ser Ser Phe Pro
    130   135   140
Phe Phe Ser Cys Lys Ala Pro Glu Gly Asp Ser Ser Val Asp Lys Thr
145   150   155   160
Phe Thr Val Ser Val Gln Thr Pro Lys Ala Gln Glu Gln Gln Glu Ala
                165   170   175
Ser Ala Ser Gln Ser Gln Ala Gln Phe His Val Arg Ser Tyr Ser Ser
            180   185   190
Ser Thr Ile Lys Glu His Ser Ala Lys Glu Lys Val Ser Gln Ser Thr
            195   200   205
Lys Ser Ala Glu Thr Gln Lys His Thr Gln Thr Lys Ser Asp Ala Thr
    210   215   220
Leu Ser Pro Met Ser Leu Tyr Ser Thr Leu His Lys Glu Val Pro Gln
225   230   235   240

1215

Ala Leu Ser Ser Thr Lys Ser Gln Gln Lys Asp Glu Glu His Arg Asp
                245   250   255
Gln Arg Gln Gln Glu Gly Tyr Glu Gln Glu Gln Glu Gln Glu Glu Gly
            260   265   270
Lys Lys Lys Thr Pro Trp Cys Thr Val Glu Ser Leu Gln Gln Thr Ser
        275   280   285
Ser Ser Asn Gln Val Tyr Glu Ser Tyr Thr Pro Ile Ile Pro Asp Pro
    290   295   300
Ile Val Glu Phe Ala Leu Ser Glu Ser Gln Leu Ser Val Leu Ala Gly
305   310   315   320
Lys Arg Val Thr Asn Leu Asp Val Leu Arg Ile Cys Thr Glu Leu Met
            325   330   335
Lys Leu Met Leu Lys Ser Arg Ala Asn Asp Thr Met Thr Arg Leu Glu
            340   345   350
Glu Arg Glu Leu Met Glu Arg Glu Ala His Glu Leu Ala Ala Ser Tyr
            355   360   365
Ser Arg Gln Ala Lys Tyr Ala Arg Trp Leu Gly Ile Ala Thr Ala Thr
    370   375   380
Leu Gly Ile Leu Gly Ala Ile Ala Pro Met Val Gly Glu Ile Ser Gly
385   390   395   400
Asp Ser Ile Leu Gly Phe Val Gln Arg Ile Ser Gly Arg Phe Lys Asp
            405   410   415
Ala Thr Ala Lys Thr Phe Phe Lys Gly Ile Gly Lys Val Phe Thr Ser
            420   425   430
Leu Ser Gln Leu Thr Glu Ala Ala Ser Lys Val His Glu Leu Ser Glu
            435   440   445
Ser Ala Val Arg Ala Val Ala Glu Tyr Arg Lys Glu Val Phe Arg Met
    450   455   460
Arg Gln Asp Glu Val Thr Arg Thr Ile Glu Glu Val Lys Asp Asn Trp
465   470   475   480
Lys Ser Met Asp Asn Phe Leu Leu Asn Ile Leu Gln Thr Glu His Asp
            485   490   495
Ala Ala Arg Ser Leu Tyr Gln
            500

        <210> 1021
        <211> 515
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1021
Cys Gly Asn Ser Thr Met Ser Ser Trp Leu Ser Gln Ala Ser Glu Val
1   5   10   15
Leu Leu Asn Gln Asp Pro Tyr Ile Pro Asp Ala Pro Arg Ser Gln Glu
            20   25   30
Ser Ser Val Pro Lys Ile Ser Tyr Ser Ile Thr Val Ala Pro Gln Glu
        35   40   45
Ala Gln Lys Ser Leu Pro Lys Phe Phe Thr Gln Lys Phe Gln Ser Gln
    50   55   60
Cys Lys Ser Glu Pro Pro Ile Thr His His Lys Thr Phe Ile Ile Ala
65   70   75   80
Thr Pro Arg Glu Arg Ile Leu Arg Phe Gly Ser Ser Phe Glu Ser Gln
            85   90   95
Leu His Asn Thr Ser Gln Ala Gln Thr Ser Ser Pro Trp Asn Leu Phe
            100   105   110
Ser Gln Lys Asn Ser Thr Glu Ala Ser Lys Ala Leu Met Gln Glu Leu
        115   120   125
Thr Met Pro Lys Ser Pro Glu Lys Thr Ser Glu Lys Ala Leu Asp Lys
    130   135   140
Asn Leu Ser Ser Lys Gln Glu Gly Ser Cys Lys Asn Phe Asp Thr Leu
145   150   155   160

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His Leu Gln Gln His Leu Lys Leu Phe Gly Thr Val Asp Ser Leu Tyr
            165                 170                 175
Ser Gln Ser Leu Asp Ser Glu Gln Gln Glu Leu Leu Gln Ser Arg Arg
            180                 185                 190
Glu Glu Arg Ser Glu Thr Tyr Ala Asn Gln Gln Ser Ser Glu Lys Lys
            195                 200                 205
Ile Glu Thr Lys Val Gln Ile Lys Asp Leu Cys Lys Asp Leu Phe Ser
            210                 215                 220
Gln Asp Gln Asp Ser Asn Gln Lys Gln Lys Lys Ser Pro Phe Gln Gln
225                 230                 235                 240
Asp Thr Ser Arg Lys Asn Arg Ile Ala Lys Ala Ala Gln Ala Val Pro
            245                 250                 255
Val Ile Pro Pro Pro Ser Ile Gly Val Phe Thr Leu Ser Tyr Leu Leu
            260                 265                 270
Thr Lys Gln Gly Ile Leu Ser Asp Phe Ser Ser Tyr Gly Cys His Lys
            275                 280                 285
Asp Ser Val Glu Ser Thr Gln Arg Glu Leu Asp Ala Leu His Glu Lys
            290                 295                 300
Arg Ile Glu Thr Ile Lys Val Ser Ile Glu Lys Glu Lys Arg Glu Arg
305                 310                 315                 320
Leu Trp Gly Ser Leu Ser Asp Ile Ile Gly Trp Leu Ala Pro Phe Val
            325                 330                 335
Ser Ile Gly Ile Gly Ile Val Ala Ile Leu Ser Gly Gly Gly Ile Phe
            340                 345                 350
Ala Phe Ala Gly Phe Phe Ala Gly Leu Ile Ser Leu Val Ile Lys Cys
            355                 360                 365
Leu Glu Lys Leu Lys Phe Trp Asp Trp Leu Glu Lys His Leu Pro Ile
            370                 375                 380
Lys Asn Glu Glu Leu Arg Lys Ile Ile Thr Ile Ile Gln Trp Val
385                 390                 395                 400
Val Tyr Leu Thr Pro Val Ile Leu Ser Ile Cys Thr Leu Lys Val Glu
            405                 410                 415
Asn Leu Gly Phe Ser Pro Ile Ile Glu Gly Ala Ile Lys Gly Ile Gln
            420                 425                 430
Pro Ala Ile Glu Ser Thr Met Ala Ala Leu Arg Cys Ala Ile Leu Phe
            435                 440                 445
Ser Gln Ala Glu Ile Tyr Lys Leu Lys Gly Lys Leu Thr Lys Ile Gln
            450                 455                 460
Leu Asp Ile Glu Leu Lys Ser Phe Asp Arg Asp Asp His Tyr Glu Arg
465                 470                 475                 480
Ser Gln Glu Leu Leu Asp Asn Met Glu Ser Ser Phe Glu Ala Leu Ser
            485                 490                 495
Arg Ile Leu Asn Tyr Met Arg Glu Leu Asp Gln Val Tyr Leu His Ser
            500                 505                 510
Leu Arg Gly
        515


        <210> 1022
        <211> 191
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1022
Cys Ile Glu Val Ile Glu Arg Thr Tyr Gly His Leu His Leu Gln Pro
1                 5                 10                  15
Thr Pro Leu Met Ser His Leu Asn Tyr Leu Leu Glu Lys Ile Ala Ala
            20                  25                  30
Ser Ser Lys Glu Asp Phe Pro Phe Pro Asp Asp Leu Glu Ser Tyr Leu
            35                  40                  45
Glu Gly Tyr Val Pro Asp Lys Asn Ile Ala Leu Asp Thr Tyr Gln Lys
            50                  55                  60
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Ile Phe Lys Ile Ser Ser Glu Asp Leu Glu Lys Val Tyr Lys Glu Gly
65                  70                  75                  80
Tyr His Ala Tyr Leu Asp Lys Asp Tyr Ala Lys Ser Ile Thr Val Phe
            85                  90                  95
Arg Trp Leu Val Phe Phe Asn Pro Phe Val Ser Lys Phe Trp Phe Ser
            100                 105                 110
Leu Gly Ala Ser Leu His Met Ser Glu Gln Tyr Ser Gln Ala Leu His
        115                 120                 125
Ala Tyr Gly Val Thr Ala Val Leu Arg Asp Lys Asp Pro Tyr Pro His
        130                 135                 140
Tyr Tyr Ala Tyr Ile Cys Tyr Thr Leu Thr Asn Glu His Glu Glu Ala
145                 150                 155                 160
Glu Lys Ala Leu Glu Met Ala Trp Val Arg Ala Gln His Lys Pro Leu
            165                 170                 175
Tyr Asn Glu Leu Lys Glu Glu Ile Leu Asp Ile Arg Lys His Lys
            180                 185                 190


        <210> 1023
        <211> 498
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1023
Phe Ser Phe Phe Phe Tyr Ala Leu Lys Leu Gln Ile Met Asn Met Pro
1               5                   10                  15
Val Pro Ser Ala Val Pro Ser Ala Asn Ile Thr Leu Lys Glu Asp Ser
            20                  25                  30
Ser Thr Val Ser Thr Ala Ser Gly Ile Leu Lys Thr Ala Thr Gly Glu
            35                  40                  45
Val Leu Val Ser Cys Thr Ala Leu Glu Gly Ser Ser Ser Thr Asp Ala
        50                  55                  60
Leu Ile Ser Leu Ala Leu Gly Gln Ile Ile Leu Ala Thr Gln Gln Glu
65                  70                  75                  80
Leu Leu Leu Gln Ser Thr Asn Val His Gln Leu Leu Phe Leu Pro Pro
            85                  90                  95
Glu Val Val Glu Leu Glu Ile Gln Val Val Asp Leu Leu Val Gln Leu
            100                 105                 110
Glu His Ala Glu Thr Ile Thr Ser Glu Pro Gln Glu Thr Gln Thr Gln
        115                 120                 125
Ser Arg Ser Glu Gln Thr Leu Pro Gln Gln Ser Ser Ser Lys Gln Ser
        130                 135                 140
Ala Leu Ser Pro Arg Ser Leu Lys Pro Glu Ile Ser Asp Ser Lys Gln
145                 150                 155                 160
Gln Gln Ala Leu Gln Thr Pro Lys Asp Ser Ala Val Arg Lys His Ser
            165                 170                 175
Glu Ala Pro Ser Pro Glu Thr Gln Ala Arg Ala Ser Leu Ser Gln Ala
            180                 185                 190
Ser Ser Ser Ser Gln Arg Ser Leu Pro Pro Gln Glu Ser Ala Pro Glu
        195                 200                 205
Arg Thr Leu Leu Glu Gln Gln Lys Ala Ser Ser Phe Ser Pro Leu Ser
    210                 215                 220
Gln Phe Ser Ala Glu Lys Gln Lys Glu Ala Leu Thr Thr Ser Lys Ser
225                 230                 235                 240
His Glu Leu Tyr Lys Glu Arg Asp Gln Asp Arg Gln Gln Arg Glu Gln
            245                 250                 255
His Asp Arg Lys His Asp Gln Glu Asp Ala Glu Ser Lys Lys Lys
            260                 265                 270
Lys Lys Lys Arg Gly Leu Gly Val Glu Ala Val Ala Glu Glu Pro Gly
        275                 280                 285
Glu Asn Leu Asp Ile Ala Ala Leu Ile Phe Ser Asp Gln Met Arg Pro
    290                 295                 300
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1218

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Pro Ala Glu Glu Thr Ser Lys Lys Glu Thr Thr Phe Lys Lys Lys Leu
305                 310             315             320
Pro Ser Pro Met Ser Val Phe Ser Arg Phe Ile Pro Ser Lys Asn Pro
            325             330             335
Leu Ser Val Gly Ser Ser Ile His Gly Pro Ile Gln Thr Pro Lys Val
            340             345             350
Glu Asn Val Phe Leu Arg Phe Met Lys Leu Met Ala Arg Ile Leu Gly
        355             360             365
Gln Ala Glu Ala Glu Ala Asn Glu Leu Tyr Met Arg Val Lys Gln Arg
        370             375             380
Thr Asp Asp Val Asp Thr Leu Thr Val Leu Ile Ser Lys Ile Asn Asn
385             390             395             400
Glu Lys Lys Asp Ile Asp Trp Ser Glu Asn Glu Glu Met Lys Ala Leu
            405             410             415
Leu Asn Arg Ala Lys Glu Ile Gly Val Thr Ile Asp Lys Glu Lys Tyr
            420             425             430
Thr Trp Thr Glu Glu Glu Lys Arg Leu Leu Lys Glu Asn Val Gln Met
        435             440             445
Arg Lys Glu Asn Met Glu Lys Ile Thr Gln Met Glu Arg Thr Asp Met
    450             455             460
Gln Arg His Leu Gln Glu Ile Ser Gln Cys His Gln Ala Arg Ser Asn
465             470             475             480
Val Leu Lys Leu Leu Lys Glu Leu Met Asp Thr Phe Ile Tyr Asn Leu
            485             490             495
Arg Pro


        <210> 1024
        <211> 108
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1024
Gly Leu Asp Phe Leu Glu Ile Phe Ile Met Lys Lys Val Val Thr Leu
    1           5           10              15
Ser Ile Ile Phe Phe Ala Thr Tyr Cys Ala Ser Glu Leu Ser Ala Val
            20              25              30
Thr Val Val Ala Val Pro Leu Ser Glu Ala Pro Gly Lys Ile Gln Val
            35              40              45
Arg Pro Val Val Gly Leu Gln Phe Gln Glu Glu Gln Gly Ser Val Pro
    50              55              60
Tyr Ser Phe Tyr Tyr Pro Tyr Asp Tyr Gly Tyr Tyr Tyr Pro Glu Thr
65              70              75              80
Tyr Gly Tyr Thr Lys Asn Thr Gly Gln Glu Ser Arg Glu Cys Tyr Thr
            85              90              95
Arg Phe Glu Asp Gly Thr Ile Phe Tyr Glu Cys Asp
            100             105


        <210> 1025
        <211> 328
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1025
Ile Phe Phe Phe Pro Trp Phe Ser Leu Cys Ser Leu Lys Ile Ala Pro
    1           5           10              15
Leu Pro Ile Leu Lys Leu His Ser Leu Ala Ser Met Thr Met Pro Ser
            20              25              30
Thr Gln Phe His Thr Thr Ile Leu Glu Gln Phe Ser Leu Phe Leu Ser
            35              40              45
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1219

Val Asp Arg Gly Leu Cys Gln Gln Ser Ile Ala Ala Tyr Arg Gln Asp
     50   55   60
Ile Ser Ser Phe Leu Thr Ile Ser Ala Ile Ser Ser Pro Gln Asp Ile
65   70   75   80
Ser Gln Asn Ser Val Tyr Ile Phe Ala Glu Glu Leu Tyr Arg Arg Lys
                85   90   95
Glu Ala Glu Thr Thr Leu Ala Arg Arg Leu Ile Ala Leu Lys Val Phe
             100   105   110
Phe Leu Phe Leu Lys Asp Gln Gln Leu Leu Pro Tyr Pro Pro Ile Ile
         115   120   125
Glu His Pro Lys Ile Trp Lys Arg Leu Pro Ser Val Leu Thr Pro Gln
     130   135   140
Glu Val Asp Ala Leu Leu Ala Val Pro Leu Gln Met Glu Lys Asn Pro
145   150   155   160
Arg His Leu Ala Phe Arg Asp Thr Ala Ile Leu His Thr Leu Tyr Ser
             165   170   175
Thr Gly Val Arg Val Ser Glu Leu Cys Asp Leu Arg Leu Gly His Val
             180   185   190
Ser Asp Asp Cys Ile Arg Val Thr Gly Lys Gly Ser Lys Thr Arg Leu
         195   200   205
Val Pro Leu Gly Ser Arg Ala Arg Glu Ala Ile Asp Ala Tyr Leu Cys
     210   215   220
Pro Phe Arg Asp Gln Tyr Gln Lys Lys Asn Pro His Glu Asp His Leu
225   230   235   240
Phe Leu Ser Thr Arg Gly His Lys Leu Glu Arg Ser Cys Val Trp Arg
             245   250   255
Arg Ile His Asn Tyr Ala Lys Gln Val Thr Ser Lys Pro Val Ser Pro
             260   265   270
His Ser Leu Arg His Ala Phe Ala Thr His Leu Leu Asp Asn Lys Ala
         275   280   285
Asp Leu Arg Val Ile Gln Glu Met Leu Gly His Ala Arg Ile Ala Ser
    290   295   300
Thr Glu Val Tyr Thr His Val Ala Ala Asp Ser Leu Ile Glu Lys Phe
305   310   315   320
Leu Ala His His Pro Arg Asn Leu
             325

          <210> 1026
          <211> 538
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1026
Gly Ala Glu Gln Phe Ser Ser Tyr Arg Glu Lys Thr Met Glu Arg Lys
1   5   10   15
Arg Phe Ile Asp Cys Asp Ser Thr Lys Ile Leu Gln Glu Leu Ala Leu
         20   25   30
Asn Pro Leu Asp Leu Thr Ala Pro Gly Val Leu Ser Ala Glu Arg Ile
         35   40   45
Lys Lys Phe Ser Leu Leu Gly Gly Gly Phe Thr Phe Ser Phe Ala Thr
    50   55   60
Glu Arg Leu Asp Asp Ala Ile Leu Ala Ala Leu Ile Ser Leu Ala Glu
65   70   75   80
Glu Arg Gly Leu His Glu Ser Met Leu Ala Met Gln Gln Gly Gln Val
             85   90   95
Val Asn Tyr Ile Glu Gly Phe Pro Ser Glu Met Arg Pro Ala Leu His
             100   105   110
Thr Ala Thr Arg Ala Trp Val Thr Asp Ser Ser Phe Thr Gly Glu Ala
         115   120   125
Glu Asp Ile Ala Val Arg Ser Arg Val Glu Ala Gln Arg Leu Lys Asp
    130   135   140

Phe Leu Thr Lys Val Arg Ser Gln Phe Thr Thr Ile Val Gln Ile Gly
145 150 155 160
Ile Gly Gly Ser Glu Leu Gly Pro Lys Ala Leu Tyr Arg Ala Leu Arg
165 170 175
Ala Tyr Cys Pro Thr Asp Lys His Val His Phe Ile Ser Asn Ile Asp
180 185 190
Pro Asp Asn Gly Ala Glu Val Leu Asp Thr Ile Asp Cys Ala Lys Ala
195 200 205
Leu Val Val Val Val Ser Lys Ser Gly Thr Thr Ile Glu Thr Ala Val
210 215 220
Asn Glu Ala Phe Phe Ala Asp Tyr Phe Ala Lys Lys Gly Leu Ser Phe
225 230 235 240
Lys Asp His Phe Ile Ala Val Thr Cys Glu Gly Ser Pro Met Asp Asp
245 250 255
Thr Gly Lys Tyr Leu Glu Val Phe His Leu Trp Glu Ser Ile Gly Gly
260 265 270
Arg Phe Ser Ser Thr Ser Met Val Gly Gly Val Val Leu Gly Phe Ala
275 280 285
Tyr Gly Phe Glu Val Phe Leu Gln Leu Leu Gln Gly Ala Ser Ala Met
290 295 300
Asp Gln Ile Ala Leu Gln Pro Asn Ala Arg Glu Asn Leu Pro Met Leu
305 310 315 320
Ser Ala Leu Ile Ser Ile Trp Asn Arg Asn Phe Leu Gly Tyr Pro Thr
325 330 335
Glu Ala Val Ile Pro Tyr Ser Ser Gly Leu Glu Phe Phe Pro Ala His
340 345 350
Leu Gln Gln Cys Cys Met Glu Ser Asn Gly Lys Ser Ile Ala Gln Asp
355 360 365
Gly Arg Arg Val Gly Phe Ser Thr Ser Pro Val Ile Trp Gly Glu Pro
370 375 380
Gly Thr Asn Gly Gln His Ser Phe Phe Gln Cys Leu His Gln Gly Thr
385 390 395 400
Asp Ile Ile Pro Val Glu Phe Ile Gly Phe Glu Lys Ser Gln Lys Gly
405 410 415
Glu Asp Ile Ser Phe Gln Gly Thr Thr Ser Ser Gln Lys Leu Phe Ala
420 425 430
Asn Met Ile Ala Gln Ala Ile Ala Leu Ala Cys Gly Ser Glu Asn Thr
435 440 445
Asn Pro Asn Lys Asn Phe Asp Gly Asn Arg Pro Ser Ser Val Leu Val
450 455 460
Ser Ser Gln Leu Asn Pro Tyr Ser Leu Gly Glu Leu Leu Ser Tyr Tyr
465 470 475 480
Glu Asn Lys Ile Val Phe Gln Gly Leu Cys Trp Gly Ile Asn Ser Phe
485 490 495
Asp Gln Glu Gly Val Ser Leu Gly Lys Ala Leu Ala Asn Arg Val Leu
500 505 510
Glu Leu Leu Glu Gly Ala Asp Ala Ser Asn Phe Pro Glu Ala Ala Ser
515 520 525
Leu Leu Thr Leu Phe Asn Ile Lys Phe Arg
530 535

<210> 1027
<211> 59
<212> PRT
<213> Chlamydia pneumoniae

<400> 1027
Cys Ser Phe Gly Phe Gly Lys Ile Cys Glu Asp Arg Met Phe Phe Ile
1 5 10 15
Ala Val Arg Ser Arg Gly Phe Leu Asp Ile His Gly Ile Leu Ala Ala
20 25 30

1221

Arg Lys Gly Lys Gln Val Val Lys Ser Thr Ala Gly Ala Trp Ile Gly
        35   40   45
Ser Arg Gly Ala Val Phe Tyr Ser Leu Val Ser
    50   55

<210> 1028
<211> 528
<212> PRT
<213> Chlamydia pneumoniae

<400> 1028
Asn Met Pro Gly Ser Val Ser Ser Pro Pro Leu Ser Pro Val Ile Val
1   5   10   15
Arg Glu Arg Val Pro Ser Ser Ser Gly Ser Asp Leu Ile Gln Pro His
                20   25   30
Ala Val Leu Lys Ile Ser Ile Leu Ile Phe Ala Leu Val Thr Ile Leu
        35   40   45
Gly Ile Val Leu Val Val Leu Ser Ser Ala Leu Gly Ala Leu Pro Ser
    50   55   60
Leu Val Leu Thr Val Ser Gly Cys Ile Ala Ile Ala Val Gly Leu Ile
65   70   75   80
Gly Leu Gly Ile Leu Val Thr Arg Leu Ile Leu Ser Thr Ile Arg Lys
            85   90   95
Val Asp Ala Met Gly Tyr Asp Ala Ala Val Lys Glu Glu Gln Tyr Leu
        100   105   110
Ser Arg Ile Arg Glu Leu Glu Ser Glu Asn Arg Glu Ile Arg Asp Arg
    115   120   125
Asn Arg Ala Val Glu Asp Gln Cys Ala His Leu Ser Glu Glu Asn Lys
    130   135   140
Asp Leu Arg Asp Pro Glu Tyr Leu His Gly Met Thr Glu Arg Leu Ile
145   150   155   160
Ala Ser Leu Glu Ile Glu Asn Gln Ala Leu Val Ala Glu Asn Ile Leu
            165   170   175
Leu Lys Asp Trp Asn Ala Ser Leu Ser Arg Asp Phe Arg Ala Tyr Lys
        180   185   190
Gln Lys Phe Pro Leu Gly Ala Leu Glu Pro Trp Lys Glu Asp Ile Ala
    195   200   205
Cys Ile Met Glu Gln Asn Leu Phe Leu Lys Pro Glu Cys Ile Ala Met
    210   215   220
Val Lys Ser Leu Pro Leu Glu Thr Gln Arg Leu Phe Leu Tyr Pro Lys
225   230   235   240
Gly Phe Gln Ser Leu Val Asn Arg Phe Ala Pro Arg Ser Arg Phe Phe
            245   250   255
Gln Thr Pro Lys Tyr Glu Tyr Asn Ser Arg Asn Glu Asn Glu Asp Gly
        260   265   270
Lys Val Ala Ala Val Cys Ala Arg Leu Lys Lys Glu Phe Phe Ser Ala
    275   280   285
Val Leu Gly Ala Cys Ser Tyr Glu Glu Leu Gly Gly Ile Cys Glu Arg
    290   295   300
Ala Val Ala Leu Lys Glu Thr Leu Pro Leu Pro Glu Ala Val Tyr Asp
305   310   315   320
Thr Leu Val Gln Glu Phe Pro Asn Leu Leu Thr Ala Glu Ser Leu Trp
            325   330   335
Lys Glu Trp Cys Phe Tyr Ser Tyr Pro Tyr Leu Arg Pro Tyr Leu Ser
        340   345   350
Val Asp Tyr Cys Lys Arg Leu Phe Val Gln Leu Phe Glu Glu Leu Cys
    355   360   365
Leu Lys Leu Phe Thr Thr Gly Ser Pro Glu Asp Gln Ala Leu Val Arg
    370   375   380
Leu Phe Ser Tyr Tyr Arg Asn His Ile Pro Ala Val Leu Ala Ser Phe
385   390   395   400

1222

Gly Leu Pro Pro Pro Glu Thr Gly Gly Ser Val Phe Val Leu Leu Pro
                    405   410   415
Lys Gln Glu Asn Leu Leu Trp Ser Gln Ile Glu Val Leu Ala Thr Arg
                420   425   430
Tyr Leu Lys Asp Thr Phe Val Arg Asn Ser Glu Trp Thr Gly Ser Phe
    435   440   445
Glu Met Met Phe Ser Tyr Asn Glu Met Cys Lys Glu Ile Ser Glu Gly
    450   455   460
Arg Ile Arg Phe Ala Glu Asp Tyr Glu Thr Arg His Ser Glu Glu Phe
465   470   475   480
Pro Pro Ser Pro Leu Ser Glu Glu Gly Glu Gly Glu Glu Phe Leu Pro
                485   490   495
Pro Cys Ser Glu Glu Glu Val Ser Val Leu Glu Arg Pro Asp Leu Asp
                500   505   510
Val Asp Ser Met Trp Val Trp His Pro Pro Val Pro Lys Gly Pro Leu
515   520   525

<210> 1029
<211> 335
<212> PRT
<213> Chlamydia pneumoniae

<400> 1029
Phe Phe Leu Lys Gly Val Arg Met Ala Phe Lys Glu Val Val Arg Val
1   5   10   15
Ala Val Thr Gly Gly Lys Gly Gln Ile Ala Tyr Asn Phe Leu Phe Ala
            20   25   30
Leu Ala His Gly Asp Val Phe Gly Val Asp Arg Gly Val Asp Leu Arg
        35   40   45
Ile Tyr Asp Val Pro Gly Thr Glu Arg Ala Leu Ser Gly Val Arg Met
    50   55   60
Glu Leu Asp Asp Gly Ala Tyr Pro Leu Leu His Arg Leu Arg Val Thr
65   70   75   80
Thr Ser Leu Asn Asp Ala Phe Asp Gly Ile Asp Ala Ala Phe Leu Ile
                85   90   95
Gly Ala Val Pro Arg Gly Pro Gly Met Glu Arg Gly Asp Leu Leu Lys
            100   105   110
Gln Asn Gly Gln Ile Phe Ser Leu Gln Gly Ala Ala Leu Asn Thr Ala
        115   120   125
Ala Lys Arg Asp Ala Lys Ile Phe Val Val Gly Asn Pro Val Asn Thr
    130   135   140
Asn Cys Trp Ile Ala Met Lys His Ala Pro Arg Leu His Arg Lys Asn
145   150   155   160
Phe His Ala Met Leu Arg Leu Asp Gln Asn Arg Met His Ser Met Leu
                165   170   175
Ala His Arg Ala Glu Val Pro Leu Glu Glu Val Ser Arg Val Val Ile
            180   185   190
Trp Gly Asn His Ser Ala Lys Gln Val Pro Asp Phe Thr Gln Ala Arg
        195   200   205
Ile Ser Gly Lys Pro Ala Ala Glu Val Ile Gly Asp Arg Asp Trp Leu
    210   215   220
Glu Asn Ile Leu Val His Ser Val Gln Asn Arg Gly Ser Ala Val Ile
225   230   235   240
Glu Ala Arg Gly Lys Ser Ser Ala Ala Ser Ala Ser Arg Ala Leu Ala
                245   250   255
Glu Ala Ala Arg Ser Ile Phe Cys Pro Lys Ser Asp Glu Trp Phe Ser
            260   265   270
Ser Gly Val Cys Ser Asp His Asn Pro Tyr Gly Ile Pro Glu Asp Leu
    275   280   285
Ile Phe Gly Phe Pro Cys Arg Met Leu Pro Ser Gly Asp Tyr Glu Ile
290   295   300

1223

Ile Pro Gly Leu Pro Trp Glu Pro Phe Ile Arg Asn Lys Ile Gln Ile
305 310 315 320
Ser Leu Asp Glu Ile Ala Gln Glu Lys Ala Ser Val Ser Ser Leu
325 330 335

<210> 1030
<211> 286
<212> PRT
<213> Chlamydia pneumoniae

<400> 1030
Arg Val Phe Val Ile Ser Thr Met Leu Trp Gly Val Ser Met Arg Gln
1 5 10 15
Ser Phe Asp Glu Leu Ser Gln Asn Ala Phe Lys Asn Ile Phe Asn Lys
20 25 30
Gln Arg Phe Cys Phe Ile Phe Cys Ser Leu Cys Cys Phe Gly Phe Val
35 40 45
Phe Ala Leu Phe Leu Lys Leu Cys Ser Arg Leu Ala Pro Glu Ile Ser
50 55 60
Leu Ser Thr Leu Gly Leu Gly Ala Phe Phe Cys Ala Phe Ser Val Ile
65 70 75 80
Cys Ala Ser Ala Ile Ile Val Gln Phe Leu Leu His Lys Glu Ser Gln
85 90 95
Gly Glu Thr Ser Lys Leu Cys Cys Ala Ile Lys Asn Thr Trp Ser Ser
100 105 110
Leu Trp Leu Ser Leu Leu Val Ser Met Pro Phe Phe Ile Ala Met Val
115 120 125
Ala Val Val Thr Val Ala Met Leu Ser Ser Phe Leu Gly Ser Leu Pro
130 135 140
Trp Val Gly Lys Leu Phe His Thr Val Leu Ile Phe Ile Pro Tyr Leu
145 150 155 160
Ser Ala Thr Ala Leu Ile Leu Leu Phe Leu Gly Ser Phe Ser Cys Leu
165 170 175
Phe Phe Cys Ile Pro Val Leu His Asn Gln Glu Ser Ile Asp Tyr Arg
180 185 190
Lys Leu Leu Glu Cys Phe Arg Gly Asn Ile Leu Arg Gln Phe Ile Gly
195 200 205
Val Val Ile Ala Leu Val Pro Leu Ala Leu Cys Ser Trp Leu Ala Leu
210 215 220
Asp Ser Phe Tyr Leu Met Thr His Leu Val Glu Ile Ala Asp Ile His
225 230 235 240
Thr Trp Ser Phe Leu Ala Gln Met Phe Val Leu Ile Val Pro Ile Ala
245 250 255
Leu Ile Leu Thr Pro Ala Val Ser Phe Phe Phe Asn Phe Ser Phe Ser
260 265 270
Phe Tyr Leu Ala Lys Gln Glu Glu Glu Lys Ala Leu Val Lys
275 280 285

<210> 1031
<211> 353
<212> PRT
<213> Chlamydia pneumoniae

<400> 1031
Phe Lys Val His Phe Met Arg Ile Ala Val Leu Gly Ala Gly Tyr Ala
1 5 10 15
Gly Leu Ser Val Thr Trp His Leu Leu Leu His Ser Gln Gly Thr Ala
20 25 30
Thr Ile Asp Leu Phe Asp Pro Ile Pro Leu Gly Glu Gly Ala Ser Gly
35 40 45

1224

Met Ser Ser Gly Leu Leu His Ala Phe Thr Gly Lys Lys Ala Leu Lys
    50   55   60
Pro Pro Leu Ala Asp Gln Gly Ile Asn Ala Thr His Ala Leu Ile Thr
65   70   75   80
Glu Ala Ser Lys Ala Leu Asn Val Pro Ile Val Ile Ser Gln Gly Ile
                85   90   95
Leu Arg Pro Ala Ile Asp Glu Asp Gln Ala Gln Leu Phe Thr Glu Arg
            100   105   110
Val Glu Glu Phe Pro Lys Glu Val Glu Trp Trp Glu Lys Ala Arg Cys
        115   120   125
Glu Ile Ser Ile Pro Ser Met Val Ile Pro Pro Asn Leu Gly Ala Leu
    130   135   140
Phe Ile Lys Ser Gly Val Thr Leu Asn Asn Asp Leu Tyr Ile Gln Gly
145   150   155   160
Leu Ala Asp Ala Cys Met Lys Leu Gly Thr Gln Phe Tyr Asp Glu Leu
                165   170   175
Ile Glu Asp Leu Ala Asp Ile Glu Glu Phe Tyr Asp His Ile Ile Val
            180   185   190
Thr Pro Gly Ala Asn Ala Ser Ile Leu Pro Glu Leu Lys Asp Met Pro
        195   200   205
Val Asn Lys Val Lys Gly Gln Leu Leu Glu Ile Ser Trp Pro Lys Asp
    210   215   220
Leu Ala Met Leu Ser Phe Ser Ile Asn Ala His Lys Tyr Met Val Ala
225   230   235   240
Asn Thr Gln Lys Asn Thr Cys Ile Leu Gly Ala Thr Phe Glu His Asn
                245   250   255
Gln Pro Glu Glu Thr Pro Asp Pro Ala Ile Ala Tyr Gln Glu Ile Met
            260   265   270
Pro Pro Val Leu Ser Leu Phe Pro Gly Leu Lys Asp Ala Gln Val Leu
        275   280   285
His Cys Tyr Ala Gly Met Arg Ser Ser Ser Lys Ser Arg Leu Pro Val
    290   295   300
Ile Ser Arg Ile Arg Glu Lys Leu Trp Phe Leu Gly Gly Leu Gly Ser
305   310   315   320
Lys Gly Leu Leu Tyr His Gly Ile Thr Gly Asp Met Leu Ala Gln Ala
                325   330   335
Val Leu Arg Lys Ser Thr Ala Tyr Ile Ala Lys Glu Phe Leu Phe Thr
            340   345   350
Ile

<210> 1032
<211> 490
<212> PRT
<213> Chlamydia pneumoniae

<400> 1032
Ile Lys Glu Thr Phe Met Thr Ser Arg Thr Lys Ser Ser Lys Asn Leu
1   5   10   15
Gly Thr Ile Ala Leu Ala Gly Met Val Val Ser Ser Ile Ile Gly Gly
                20   25   30
Gly Ile Phe Ser Leu Pro Gln Asn Met Ala Ala Thr Ala Gly Ala Gly
            35   40   45
Ala Val Ile Leu Ser Trp Ile Leu Thr Gly Phe Gly Met Phe Phe Ile
    50   55   60
Ala Asn Thr Phe Arg Ile Leu Ser Thr Ile Arg Pro Asp Leu Lys Glu
65   70   75   80
Gly Ile Tyr Met Tyr Ser Arg Glu Gly Phe Gly Pro Tyr Ile Gly Phe
                85   90   95
Thr Ile Gly Trp Gly Tyr Trp Leu Cys Gln Ile Phe Gly Asn Val Gly
            100   105   110

1225

Tyr Ala Val Ile Thr Met Asp Ala Leu Asn Tyr Phe Phe Pro Pro Tyr
        115   120   125
Phe Gln Gly Gly Asn Thr Leu Pro Ala Ile Leu Gly Gly Ser Ile Leu
    130   135   140
Ile Trp Val Phe Asn Phe Ile Val Leu Lys Gly Ile Arg Gln Ala Ser
145   150   155   160
Ile Ile Asn Val Ile Gly Thr Ile Phe Lys Ile Ile Pro Leu Ile Ile
                165   170   175
Phe Ile Ile Leu Thr Ala Phe Phe Phe Lys Leu Ala Val Phe Lys Thr
                180   185   190
Asp Phe Trp Gly His Ala Val Thr Lys Ala Gln Pro Ser Leu Gly Ser
        195   200   205
Val Ser Ser Gln Leu Lys Gly Thr Met Leu Val Thr Leu Trp Ala Phe
    210   215   220
Ile Gly Ile Glu Gly Ala Val Val Met Ser Gly Arg Ala Lys Asn Pro
225   230   235   240
Leu Ser Val Gly Gln Ala Thr Val Leu Gly Phe Leu Gly Cys Leu Thr
                245   250   255
Ile Tyr Ile Leu Phe Ser Leu Leu Pro Phe Gly Ser Leu Phe Gln His
                260   265   270
Gln Leu Ala Asn Ile Pro Asn Pro Ser Thr Ala Gly Val Leu Asp Ile
        275   280   285
Leu Val Gly Lys Trp Gly Glu Val Leu Met Asn Val Gly Leu Ile Ile
    290   295   300
Ala Val Leu Ser Ser Trp Leu Ser Trp Thr Ile Ile Val Ala Glu Ile
305   310   315   320
Pro Phe Ser Ala Ala Lys Asn Gly Thr Phe Pro Glu Ile Phe Thr Ile
                325   330   335
Glu Asn Lys Glu Lys Ser Pro Ser Val Ser Leu Tyr Ile Thr Ser Ser
                340   345   350
Val Met Gln Leu Ala Met Leu Leu Val Tyr Phe Ser Ser Asn Ala Trp
        355   360   365
Asn Thr Met Leu Ser Ile Thr Gly Val Met Val Leu Pro Ala Tyr Leu
    370   375   380
Ala Ser Ala Ala Phe Leu Phe Lys Leu Ser Lys Ser Lys Thr Tyr Pro
385   390   395   400
Lys Lys Gly Ser Ile Lys Ala Pro Leu Ala Met Ile Thr Gly Ile Leu
                405   410   415
Gly Val Val Tyr Ser Leu Trp Leu Ile Tyr Ala Gly Gly Leu Lys Tyr·
                420   425   430
Leu Phe Met Ala Leu Val Leu Leu Ala Leu Gly Ile Pro Phe Tyr Ile
        435   440   445
Asp Ala Gly Lys Lys Lys Lys Asn Ala Lys Thr Phe Phe Ala Lys Lys
    450   455   460
Glu Ile Val Gly Met Thr Phe Ile Gly Leu Leu Ala Leu Thr Ala Ile
465   470   475   480
Phe Leu Phe Leu Thr Gly Arg Ile Lys Ile
                485   490

        <210> 1033
        <211> 196
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1033
Leu Met Ala Tyr Gly Thr Arg Tyr Pro Thr Leu Ala Phe His Thr Gly
1   5   10   15
Gly Ile Gly Glu Ser Asp Asp Gly Met Pro Pro Gln Pro Phe Glu Thr
                20   25   30
Phe Cys Tyr Asp Ser Ala Leu Leu Gln Ala Lys Ile Glu Asn Phe Asn
        35   40   45

1226

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Ile Val Pro Tyr Thr Ser Val Leu Pro Lys Glu Leu Phe Gly Asn Ile
    50                  55                  60
Val Pro Val Asp Thr Cys Val Lys Ser Phe Lys His Gly Ala Val Leu
65                  70                  75                  80
Glu Val Ile Met Ala Gly Arg Gly Ala Ala Leu Ser Asp Gly Thr His
                85                  90                  95
Ala Ile Ala Thr Gly Ile Gly Ile Cys Trp Gly Lys Asp Lys Asn Gly
                100                 105                 110
Glu Leu Ile Gly Gly Trp Ala Ala Glu Tyr Val Glu Phe Phe Pro Thr
                115                 120                 125
Trp Ile Asn Asp Glu Ile Ala Glu Thr His Ala Lys Met Trp Leu Lys
    130                 135                 140
Lys Ser Leu Gln His Glu Leu Asp Leu Arg Ser Ile Ala Lys His Ser
145                 150                 155                 160
Glu Phe Gln Phe Phe His Asn Tyr Ile Asn Ile Lys Gln Lys Phe Gly
                165                 170                 175
Phe Cys Leu Thr Ala Leu Gly Phe Leu Asn Phe Glu Asn Ala Glu Pro
                180                 185                 190
Ala Lys Val Asn
        195


        <210> 1034
        <211> 490
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1034
Asn Asn Lys Lys Lys Asp Tyr Ser Gly Glu Phe Leu Thr Thr Asp Thr
1                   5                   10                  15
Val Asp Ser Ile Ala Phe Leu Pro Ser Glu Glu Asn Phe Cys Tyr Ile
                20                  25                  30
Lys Thr Ile Leu Phe Phe Arg Val Lys Lys Lys His Tyr Ala Phe Phe
                35                  40                  45
Tyr Gly Glu Phe Met Ile Ser Phe Arg Phe Leu Leu Leu Ser Gly Leu
    50                  55                  60
Cys Ala Leu Gly Ile Ser Ser Tyr Ala Glu Thr Pro Lys Glu Thr Thr
65                  70                  75                  80
Gly His Tyr His Arg Tyr Lys Ala Arg Ile Gln Lys Lys His Pro Glu
                85                  90                  95
Ser Ile Lys Glu Ser Ala Pro Ser Glu Thr Pro His His Asn Ser Leu
                100                 105                 110
Leu Ser Pro Val Thr Asn Ile Phe Cys Ser His Pro Trp Lys Asp Gly
    115                 120                 125
Ile Ser Val Ser Asn Leu Leu Thr Ser Val Glu Lys Ala Thr Asn Thr
    130                 135                 140
Gln Ile Ser Leu Asp Phe Ser Ile Leu Pro Gln Trp Phe Tyr Pro His
145                 150                 155                 160
Lys Ala Leu Gly Gln Thr Gln Ala Leu Glu Ile Pro Ser Trp Gln Phe
                165                 170                 175
Tyr Phe Ser Pro Ser Thr Thr Trp Thr Leu Tyr Asp Ser Pro Thr Ala
                180                 185                 190
Gly Gln Gly Ile Val Asp Phe Ser Tyr Thr Leu Ile His Tyr Trp Gln
                195                 200                 205
Thr Asn Gly Val Asp Ala Asn Gln Ala Ala Gly Thr Ala Ser Ser Met
    210                 215                 220
Asn Asp Tyr Ser Asn Arg Glu Asn Asn Leu Ala Gln Leu Thr Phe Ser
225                 230                 235                 240
Gln Thr Phe Pro Gly Asp Phe Leu Thr Leu Ala Ile Gly Gln Tyr Ser
                245                 250                 255
Leu Tyr Ala Ile Asp Gly Thr Leu Tyr Asp Asn Asp Gln Tyr Ser Gly
        260                 265                 270
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Phe Ile Ser Tyr Ala Leu Ser Gln Asn Ala Ser Ala Thr Tyr Ser Leu
275   280   285
Gly Ser Thr Gly Ala Tyr Leu Gln Phe Thr Pro Asn Ser Glu Ile Lys
290   295   300
Val Gln Leu Gly Phe Gln Asp Ser Tyr Asn Ile Asp Gly Thr Asn Phe
305   310   315   320
Ser Ile Tyr Asn Leu Thr Lys Ser Lys Tyr Asn Phe Tyr Gly Tyr Ala
                325   330   335
Ser Trp Thr Pro Lys Pro Ser Cys Gly Asp Gly Gln Tyr Ser Val Leu
            340   345   350
Leu Tyr Ser Thr Arg Lys Val Pro Glu Gln Asn Ser Gln Val Thr Gly
            355   360   365
Trp Ser Leu Asn Ala Ala Gln His Ile His Glu Lys Leu Tyr Leu Phe
370   375   380
Gly Arg Ile Asn Gly Ala Thr Gly Thr Ala Leu Pro Ile Asn Arg Ser
385   390   395   400
Tyr Val Leu Gly Leu Val Ser Glu Asn Pro Leu Asn Arg His Ser Gln
            405   410   415
Asp Leu Leu Gly Ile Gly Phe Ala Thr Asn Lys Val Asn Ala Lys Ala
            420   425   430
Ile Ser Asn Val Asn Lys Leu Arg Arg Tyr Glu Ser Val Met Glu Ala
        435   440   445
Phe Ala Thr Ile Gly Phe Gly Pro Tyr Ile Ser Leu Thr Pro Asp Phe
    450   455   460
Gln Leu Tyr Ile His Pro Ala Leu Arg Pro Glu Arg Arg Thr Ser Gln
465   470   475   480
Val Tyr Gly Leu Arg Ala Asn Leu Ser Leu
                485   490

    <210> 1035
    <211> 286
    <212> PRT
    <213> Chlamydia pneumoniae

    <400> 1035
Lys Thr Ser Trp Gln Lys Tyr Lys Lys Tyr Leu Ser Tyr Ser Ile Leu
1   5   10   15
Val Gln Lys Ile Ala Arg Tyr Val Met Lys Thr Trp Leu Phe Phe Thr
            20   25   30
Phe Leu Phe Ser Cys Ser Ser Phe Tyr Ala Ser Cys Arg Tyr Ala Glu
        35   40   45
Val Arg Ser Ile His Glu Val Ala Gly Asp Ile Leu Tyr Asp Glu Glu
    50   55   60
Asn Phe Trp Leu Ile Leu Asp Leu Asp Asp Thr Leu Leu Gln Gly Gly
65   70   75   80
Glu Ala Leu Ser His Ser Ile Trp Lys Ser Lys Ala Ile Gln Gly Leu
            85   90   95
Gln Lys Gln Gly Thr Pro Glu Gln Glu Ala Trp Glu Ala Val Val Pro
        100   105   110
Phe Trp Ile Glu Ile Gln Glu Met Gly Thr Val Gln Pro Ile Glu Ser
    115   120   125
Ala Ile Phe Leu Leu Ile Glu Lys Ile Gln Lys Gln Gly Lys Thr Thr
    130   135   140
Phe Val Tyr Thr Glu Arg Pro Lys Thr Ala Lys Asp Leu Thr Leu Lys
145   150   155   160
Gln Leu His Met Leu Asn Val Ser Leu Glu Asp Thr Ala Pro Gln Pro
            165   170   175
Gln Ala Pro Leu Pro Lys Asn Leu Leu Tyr Thr Ser Gly Ile Leu Phe
        180   185   190
Ser Gly Asp Tyr His Lys Gly Pro Gly Leu Asp Leu Phe Leu Glu Ile
        195   200   205

1228

```
Cys Thr Pro Leu Pro Ala Lys Ile Ile Tyr Ile Asp Asn Gln Lys Glu
    210                 215                 220
Asn Val Leu Arg Ile Gly Asp Leu Cys Gln Lys Tyr Gly Ile Ala Tyr
225                 230                 235                 240
Phe Gly Ile Thr Tyr Lys Ala Gln Glu Leu His Pro Pro Ile Tyr Phe
                245                 250                 255
Asp Asn Ile Ala Gln Val Gln Tyr Asn Tyr Ser Lys Lys Leu Leu Ser
                260                 265                 270
Asn Glu Ala Ala Ala Leu Leu Leu Arg His Gln Met His Glu
        275                 280                 285


        <210> 1036
        <211> 504
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1036
Val Val Gln Leu Pro Leu Met Val Pro Ile Val His Leu Gln Ile Trp
  1             5                 10                  15
Arg Phe Ser Met Ile Tyr Tyr Gly Val Ser Val Met Leu Cys Ala Thr
            20                 25                  30
Val Ser Gly Pro Ser Phe Cys Glu Ala Lys Gln Gln Ile Leu Lys Ser
        35                 40                  45
Leu His Leu Val Asp Ile Ile Glu Leu Arg Leu Asp Leu Ile Asn Glu
    50                 55                  60
Leu Asp Asp Gln Glu Leu His Thr Leu Ile Thr Thr Ala Gln Asn Pro
65                 70                  75                  80
Ile Leu Thr Phe Arg Gln His Lys Glu Met Ser Thr Ala Leu Trp Ile
                85                 90                  95
Gln Lys Leu Tyr Ser Leu Ala Lys Leu Glu Pro Lys Trp Met Asp Ile
            100                 105                 110
Asp Val Ser Leu Pro Lys Thr Ala Leu Gln Thr Ile Arg Lys Ser His
        115                 120                 125
Pro Lys Ile Lys Leu Ile Leu Ser Tyr His Thr Asp Lys Asn Glu Asp
    130                 135                 140
Leu Asp Ala Ile Tyr Asn Glu Met Leu Ala Thr Pro Ala Glu Ile Tyr
145                 150                 155                 160
Lys Ile Val Leu Ser Pro Glu Asn Ser Ser Glu Ala Leu Asn Tyr Ile
                165                 170                 175
Lys Lys Ala Arg Leu Leu Pro Lys Pro Ser Thr Val Leu Cys Met Gly
            180                 185                 190
Thr His Gly Leu Pro Ser Arg Val Leu Ser Pro Leu Ile Ser Asn Ala
            195                 200                 205
Met Asn Tyr Ala Ala Gly Ile Ser Ala Pro Gln Val Ala Pro Gly Gln
    210                 215                 220
Pro Lys Leu Glu Glu Leu Leu Ser Tyr Asn Tyr Ser Lys Leu Ser Glu
225                 230                 235                 240
Lys Ser His Ile Tyr Gly Leu Ile Gly Asp Pro Val Asp Arg Ser Ile
                245                 250                 255
Ser His Leu Ser His Asn Phe Leu Leu Ser Lys Leu Ser Leu Asn Ala
                260                 265                 270
Thr Tyr Ile Lys Phe Pro Val Thr Ile Gly Glu Val Val Thr Phe Phe
            275                 280                 285
Ser Ala Ile Arg Asp Leu Pro Phe Ser Gly Leu Ser Val Thr Met Pro
    290                 295                 300
Leu Lys Thr Ala Ile Phe Asp His Val Asp Ala Leu Asp Ala Ser Ala
305                 310                 315                 320
Gln Leu Cys Glu Ser Ile Asn Thr Leu Val Phe Arg Asn Gln Lys Ile
                325                 330                 335
Leu Gly Tyr Asn Thr Asp Gly Glu Gly Val Ala Lys Leu Leu Lys Gln
            340                 345                 350
```

Lys Asn Ile Ser Val Asn Asn Lys His Ile Ala Ile Val Gly Ala Gly
        355   360   365
Gly Ala Ala Lys Ala Ile Ala Ala Thr Leu Ala Met Gln Gly Ala Asn
        370   375   380
Leu His Ile Phe Asn Arg Thr Leu Ser Ser Ala Ala Ala Leu Ala Thr
385   390   395   400
Cys Cys Lys Gly Lys Ala Tyr Pro Leu Gly Ser Leu Glu Asn Phe Lys
                405   410   415
Thr Ile Asp Ile Ile Ile Asn Cys Leu Pro Pro Glu Val Thr Phe Pro
                420   425   430
Trp Arg Phe Pro Pro Ile Val Met Asp Ile Asn Thr Lys Pro His Pro
        435   440   445
Ser Pro Tyr Leu Glu Arg Ala Gln Lys His Gly Ser Leu Ile Ile His
        450   455   460
Gly Tyr Glu Met Phe Ile Glu Gln Ala Leu Leu Gln Phe Ala Leu Trp
465   470   475   480
Phe Pro Asp Phe Leu Thr Pro Glu Ser Cys Asp Ser Phe Arg Asn Tyr
                485   490   495
Val Lys Asn Phe Met Ala Lys Val
                500

        <210> 1037
        <211> 399
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1037
Gly Tyr Asp Lys Pro Cys Ser Cys Arg Ser Cys Ile Ile Pro Thr Met
1   5   10   15
Leu Gln Thr Met Met Ser Glu Thr Ile Ile Thr Thr Pro His Val Val
        20   25   30
Lys Leu Ile Ser Asn Phe Phe Gln Lys Lys Leu Phe Ser Ser Ile Ser
        35   40   45
Thr Ala Tyr Pro Leu Val Ile Ile Thr Asp Val Ser Val Gln Gln His
        50   55   60
Leu Leu Gly Pro Ile Leu Asp His Ile Lys Met Leu Gly Tyr Gln Val
65   70   75   80
Ile Val Leu Thr Phe Pro Pro Gly Glu Pro Asn Lys Thr Trp Glu Thr
                85   90   95
Phe Ile Ser Leu Gln Tyr Gln Leu Val Asp Gln Asn Ile Ser Pro Lys
        100   105   110
Ser Ser Ile Ile Gly Ile Gly Gly Gly Thr Val Leu Asp Met Thr Gly
        115   120   125
Phe Leu Ala Ala Thr Tyr Cys Arg Gly Leu Pro Leu Tyr Leu Ile Pro
        130   135   140
Thr Thr Ile Thr Ala Met Val Asp Thr Ser Ile Gly Gly Lys Asn Gly
145   150   155   160
Ile Asn Leu Arg Gly Ile Lys Asn Arg Leu Gly Thr Phe Tyr Leu Pro
                165   170   175
Lys Glu Val Trp Met Cys Pro Gln Phe Leu Ser Thr Leu Pro Arg Glu
                180   185   190
Glu Trp Tyr His Gly Ile Ala Glu Ala Ile Lys His Gly Phe Ile Ala
        195   200   205
Asp Ala Tyr Leu Trp Glu Phe Leu Asn Ser His Ser Lys Met Leu Phe
        210   215   220
Ser Ser Ser Gln Ile Leu His Glu Phe Ile Lys Arg Asn Cys Gln Ile
225   230   235   240
Lys Ala Ala Ile Val Ala Glu Asp Pro Tyr Asp Arg Ser Leu Arg Lys
                245   250   255
Ile Leu Asn Phe Gly His Ser Ile Ala His Ala Ile Glu Thr Leu Ala
                260   265   270

1230

```
Lys Gly Thr Val Asn His Gly Gln Ala Val Ser Val Gly Met Met Ile
    275                 280                 285
Glu Thr Arg Ile Ser Leu Ala Glu Gly Val Met Lys Thr Pro Gln Leu
    290                 295                 300
Ile Asp Gln Leu Glu Arg Leu Leu Lys Arg Phe Asn Leu Pro Ser Thr
305                 310                 315                 320
Leu Lys Asp Leu Gln Ser Ile Val Pro Glu His Leu His Asn Ser Leu
                325                 330                 335
Tyr Ser Pro Glu Asn Ile Ile Tyr Thr Leu Gly Tyr Asp Lys Lys Asn
                340                 345                 350
Leu Ser Gln His Glu Leu Lys Met Ile Met Ile Glu His Leu Gly Arg
                355                 360                 365
Ala Ala Pro Phe Asn Gly Thr Tyr Cys Ala Ser Pro Asn Met Glu Ile
    370                 375                 380
Leu Tyr Asp Ile Leu Trp Ser Glu Cys His Val Met Arg His Cys
385                 390                 395
```

        <210> 1038
        <211> 388
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1038

```
Leu His Phe Ser Arg Gly Ser Arg Arg Ser Phe Leu Glu Glu Leu Leu
 1               5                   10                  15
Arg Thr Ser Val Ser Arg Ser His Tyr Leu Val Lys Val Met Lys Asn
          20                  25                  30
Ser Phe Gly Ser Leu Phe Ser Phe Thr Thr Trp Gly Glu Ser His Gly
          35                  40                  45
Pro Ser Ile Gly Val Val Ile Asp Gly Cys Pro Ala Gly Leu Glu Leu
    50                  55                  60
His Glu Ser Asp Phe Val Pro Ala Met Lys Arg Arg Arg Pro Gly Asn
65                  70                  75                  80
Pro Gly Thr Ser Ser Arg Lys Glu Asn Asp Ile Val Gln Ile Leu Ser
                85                  90                  95
Gly Val Tyr Lys Gly Lys Thr Thr Gly Thr Pro Leu Ser Leu Gln Ile
          100                 105                 110
Leu Asn Thr Asp Val Asp Ser Ser Pro Tyr Glu Asn Ser Glu Arg Leu
          115                 120                 125
Tyr Arg Pro Gly His Ser Gln Tyr Thr Tyr Glu Lys Lys Phe Gly Ile
    130                 135                 140
Val Asp Pro Asn Gly Gly Gly Arg Ser Ser Ala Arg Glu Thr Ala Cys
145                 150                 155                 160
Arg Val Ala Ala Gly Val Val Ala Glu Lys Phe Leu Ala Asn Gln Asn
              165                 170                 175
Ile Phe Thr Leu Ala Tyr Leu Ser Ser Leu Gly Ser Leu Thr Leu Pro
          180                 185                 190
His Tyr Leu Lys Ile Ser Pro Glu Leu Ile His Lys Ile His Thr Ser
          195                 200                 205
Pro Phe Tyr Ser Pro Leu Pro Asn Glu Lys Ile Gln Glu Ile Leu Thr
    210                 215                 220
Ser Leu His Asp Asp Ser Asp Ser Leu Gly Gly Val Ile Ser Phe Ile
225                 230                 235                 240
Thr Ser Pro Ile His Asp Phe Leu Gly Glu Pro Leu Phe Gly Lys Val
              245                 250                 255
His Ala Leu Leu Ala Ser Ala Leu Met Ser Ile Pro Ala Ala Lys Gly
          260                 265                 270
Phe Glu Ile Gly Lys Gly Phe Ala Ser Ala Gln Met Arg Gly Ser Gln
    275                 280                 285
Tyr Thr Asp Pro Phe Val Met Glu Gly Glu Asn Ile Thr Leu Lys Ser
    290                 295                 300
```

1231

Asn Asn Cys Gly Gly Thr Leu Gly Gly Ile Thr Ile Gly Val Pro Ile
305   310   315   320
Glu Gly Arg Ile Ala Phe Lys Pro Thr Ser Ser Ile Lys Arg Pro Cys
            325   330   335
Ala Thr Val Thr Lys Thr Lys Lys Glu Thr Thr Tyr Arg Thr Pro Gln
            340   345   350
Thr Gly Arg His Asp Pro Cys Val Ala Ile Arg Ala Val Pro Val Val
            355   360   365
Glu Ala Met Ile Asn Leu Val Leu Ala Asp Leu Val Leu Tyr Gln Arg
    370   375   380
Cys Ser Lys Leu
385

        <210> 1039
        <211> 184
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1039
Trp Lys Leu Glu Leu Arg Asn Val Met Thr Ile Ile Leu Cys Gly Leu
  1   5   10   15
Pro Thr Ser Gly Lys Ser Ser Leu Gly Lys Ala Leu Ala Lys Phe Leu
            20   25   30
Asn Leu Pro Phe Tyr Asp Leu Asp Asp Leu Ile Val Ser Asn Tyr Ser
            35   40   45
Ser Ala Leu Tyr Ser Ser Ser Ala Glu Ile Tyr Lys Ala Tyr Gly Asp
    50   55   60
Gln Lys Phe Ser Glu Cys Glu Ala Arg Ile Leu Glu Thr Leu Pro Pro
65   70   75   80
Glu Asp Ala Leu Ile Ser Leu Gly Gly Gly Thr Leu Met Tyr Glu Ala
            85   90   95
Ser Tyr Arg Ala Ile Gln Thr Arg Gly Ala Leu Val Phe Leu Ser Val
            100   105   110
Glu Leu Pro Leu Ile Tyr Glu Arg Leu Glu Lys Arg Gly Leu Pro Glu
            115   120   125
Arg Leu Lys Glu Ala Met Lys Thr Lys Pro Leu Ser Glu Ile Leu Thr
    130   135   140
Glu Arg Ile Asp Arg Met Lys Glu Ile Ala Asp Tyr Ile Phe Pro Val
145   150   155   160
Asp His Val Asp His Ser Ser Lys Ser Ser Leu Glu Gln Ala Ser Gln
            165   170   175
Asp Leu Ile Thr Leu Leu Lys Ser
            180

        <210> 1040
        <211> 449
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1040
Val Cys Phe Thr Met Leu Thr Tyr Lys Val Ser Pro Ser Ser Val Tyr
  1   5   10   15
Gly Asn Ala Phe Ile Pro Ser Ser Lys Ser His Thr Leu Arg Ala Ile
            20   25   30
Leu Trp Ala Ser Val Ala Glu Gly Lys Ser Ile Ile Tyr Asn Tyr Leu
            35   40   45
Asp Ser Pro Asp Thr Glu Ala Met Ile Cys Ala Cys Lys Gln Met Gly
    50   55   60
Ala Ser Ile Lys Lys Phe Pro Gln Ile Leu Glu Ile Val Gly Asn Pro
65   70   75   80

1232

```
Leu Ala Ile Phe Pro Lys Tyr Thr Leu Ile Asp Ala Gly Asn Ser Gly
                85                      90                      95
Ile Val Leu Arg Phe Met Thr Ala Leu Ala Cys Val Phe Ser Lys Glu
            100                 105                 110
Ile Thr Val Thr Gly Ser Ser Gln Leu Gln Arg Arg Pro Met Ala Pro
        115                 120                 125
Leu Leu Gln Ala Leu Arg Asn Phe Gly Ala Ser Phe His Phe Ser Ser
130                     135                 140
Asp Lys Ser Val Leu Pro Phe Thr Met Ser Gly Pro Leu Arg Ser Ala
145                 150                 155                 160
Tyr Ser Asp Val Glu Gly Ser Asp Ser Gln Phe Ala Ser Ala Leu Ala
                165                 170                 175
Val Ala Cys Ser Leu Ala Glu Gly Pro Cys Ser Phe Thr Ile Ile Glu
                180                 185                 190
Pro Lys Glu Arg Pro Trp Phe Asp Leu Ser Leu Trp Trp Leu Glu Lys
            195                 200                 205
Leu His Leu Pro Tyr Ser Cys Ser Asp Thr Thr Tyr Ser Phe Pro Gly
    210                 215                 220
Ser Ser His Pro Gln Gly Phe Ser Tyr His Val Thr Gly Asp Phe Ser
225                 230                 235                 240
Ser Ala Ala Phe Ile Ala Ala Ala Ala Leu Leu Ser Lys Ser Leu Gln
                245                 250                 255
Pro Ile Arg Leu Arg Asn Leu Asp Ile Leu Asp Ile Gln Gly Asp Lys
            260                 265                 270
Ile Phe Phe Ser Leu Met Gln Asn Leu Gly Ala Ser Ile Gln Tyr Asp
            275                 280                 285
Asn Glu Glu Ile Leu Val Phe Pro Ser Ser Phe Ser Gly Gly Ser Ile
    290                 295                 300
Asp Met Asp Gly Cys Ile Asp Ala Leu Pro Ile Leu Thr Val Leu Cys
305                 310                 315                 320
Cys Phe Ala Asp Ser Pro Ser His Leu Tyr Asn Ala Arg Ser Ala Lys
                325                 330                 335
Asp Lys Glu Ser Asp Arg Ile Leu Ala Ile Thr Glu Glu Leu Gln Lys
            340                 345                 350
Met Gly Ala Cys Ile Gln Pro Thr His Asp Gly Leu Leu Val Asn Pro
            355                 360                 365
Ser Pro Leu Tyr Gly Ala Val Leu Asp Ser His Asp Asp His Arg Ile
    370                 375                 380
Ala Met Ala Leu Thr Ile Ala Ala Leu Tyr Ala Ser Gly Asp Ser Arg
385                 390                 395                 400
Ile His Asn Thr Ala Cys Val Arg Lys Thr Phe Pro Asn Phe Val Gln
            405                 410                 415
Thr Leu Asn Ile Met Glu Ala Arg Ile Glu Glu Cys His Asp Asn Tyr
            420                 425                 430
Ser Met Trp Ser Thr His Lys Arg Lys Val Phe Ala Arg Glu Ser Phe
    435                 440                 445
Gly
```

<210> 1041
<211> 268
<212> PRT
<213> Chlamydia pneumoniae

<400> 1041

```
Arg Pro Ser Gln Ser Leu Phe Leu Arg Thr Trp Ser Pro Ser Ser Ser
1               5                   10                  15
Phe Arg Glu His Thr Val Cys Ala Ala Pro Leu Leu Tyr Pro Arg Arg
            20                  25                  30
Arg Ser Pro Asp Tyr Leu Phe Ser Pro Thr Gly Cys Pro Met Ser Thr
        35                  40                  45
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Thr Thr Val Lys His Phe Ile His Thr Ala Ser Arg Trp Glu Pro Val
    50                  55                  60
Leu Lys Glu Ile Val Ala Ser Asn Tyr Trp His Ala Gln Trp Ile Asn
65                  70                  75                  80
Thr Leu Ser Phe Leu Glu Asn Ser Gly Ala Lys Lys Ile Ser Ala Ser
                85                  90                  95
Glu His Pro Thr Glu Val Lys Glu Glu Val Leu Lys His Ala Ala Glu
                100                 105                 110
Glu Phe Arg His Gly His Tyr Leu Lys Thr Gln Ile Ser Arg Ile Ser
            115                 120                 125
Glu Thr Ser Leu Pro Asp Tyr Thr Ser Lys Asn Leu Leu Gly Gly Leu
        130                 135                 140
Leu Thr Lys Tyr Tyr Leu His Leu Leu Asp Leu Arg Thr Cys Arg Val
145                 150                 155                 160
Leu Glu Asn Glu Tyr Ser Leu Ser Gly Gln Thr Leu Lys Thr Ala Ala
                165                 170                 175
Tyr Ile Leu Val Thr Tyr Ala Ile Glu Leu Arg Ala Ser Glu Leu Tyr
            180                 185                 190
Pro Leu Tyr His Asp Ile Leu Lys Glu Ala Gln Ser Lys Ile Thr Val
        195                 200                 205
Lys Ser Ile Ile Leu Glu Glu Gln Gly His Leu Gln Glu Met Glu Arg
    210                 215                 220
Glu Leu Lys Asp Leu Pro His Gly Glu Glu Leu Leu Gly Tyr Ala Cys
225                 230                 235                 240
Gln Phe Glu Gly Glu Leu Cys Leu Gln Phe Val Glu Arg Leu Glu Gln
                245                 250                 255
Met Ile Phe Asp Pro Ser Ser Thr Phe Thr Lys Phe
        260                 265


        <210> 1042
        <211> 526
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1042
Asp Phe Arg Arg Ile Phe Ile Pro Leu His Ile Lys Lys Thr Ser Gly
1               5                   10                  15
Arg Cys Val Phe Phe Leu Val Met Phe Leu Asp Phe Ser Glu Pro Ser
            20                  25                  30
Ile Ser Arg Lys Tyr Gln Ser His Leu Phe Asn Gly Arg Ser Asn Ala
        35                  40                  45
Leu Thr Lys Pro Gln Tyr Leu Arg Tyr Gly Gly Lys Trp Val Ser Arg
    50                  55                  60
Gly Arg Arg Ala Leu Ala Asn Ser Arg Asn Gln Ala Ser Tyr Asn Arg
65                  70                  75                  80
Asp Ser Cys Gln Gly Lys Arg Asn His Lys Asp Asn His Lys Leu Leu
                85                  90                  95
Cys Arg Thr Met Glu Gly Ser Met Asp Lys Gln Ser Ser Gly Asn Ser
            100                 105                 110
Gly Cys Ile Trp His Pro Phe Thr Gln Ser Ala Leu Asp Ser Thr Pro
        115                 120                 125
Ile Lys Ile Val Arg Gly Glu Gly Ala Tyr Leu Tyr Ala Glu Ser Gly
        130                 135                 140
Thr Arg Tyr Leu Asp Ala Ile Ser Ser Trp Trp Cys Asn Leu His Gly
145                 150                 155                 160
His Gly His Pro Tyr Ile Thr Lys Lys Leu Cys Glu Gln Ala Gln Lys
                165                 170                 175
Leu Glu His Val Ile Phe Ala Asn Phe Thr His Glu Pro Ala Leu Glu
            180                 185                 190
Leu Val Ser Lys Leu Ala Pro Leu Leu Pro Glu Gly Leu Glu Arg Phe
        195                 200                 205
```


                            1234

Phe Phe Ser Asp Asn Gly Ser Thr Ser Ile Glu Ile Ala Met Lys Ile
210   215   220
Ala Val Gln Tyr Tyr Tyr Asn Gln Asn Lys Ala Lys Ser His Phe Val
225   230   235   240
Gly Leu Ser Asn Ala Tyr His Gly Asp Thr Phe Gly Ala Met Ser Ile
245   250   255
Ala Gly Thr Ser Pro Thr Thr Val Pro Phe His Asp Leu Phe Leu Pro
260   265   270
Ser Ser Thr Ile Ala Ala Pro Tyr Tyr Gly Lys Glu Glu Leu Ala Ile
275   280   285
Ala Gln Ala Lys Thr Val Phe Ser Glu Ser Asn Ile Ala Ala Phe Ile
290   295   300
Tyr Glu Pro Leu Leu Gln Gly Ala Gly Gly Met Leu Met Tyr Asn Pro
305   310   315   320
Glu Gly Leu Lys Glu Ile Leu Lys Leu Ala Lys His Tyr Gly Val Leu
325   330   335
Cys Ile Ala Asp Glu Ile Leu Thr Gly Phe Gly Arg Thr Gly Pro Leu
340   345   350
Phe Ala Ser Glu Phe Thr Asp Ile Pro Pro Asp Ile Ile Cys Leu Ser
355   360   365
Lys Gly Leu Thr Gly Gly Tyr Leu Pro Leu Ala Leu Thr Val Thr Thr
370   375   380
Lys Glu Ile His Asp Ala Phe Val Ser Gln Asp Arg Met Lys Ala Leu
385   390   395   400
Leu His Gly His Thr Phe Thr Gly Asn Pro Leu Gly Cys Ser Ala Ala
405   410   415
Leu Ala Ser Leu Asp Leu Thr Leu Ser Pro Glu Cys Leu Gln Gln Arg
420   425   430
Gln Met Ile Glu Arg Cys His Gln Glu Phe Gln Glu Ala His Gly Ser
435   440   445
Leu Trp Gln Arg Cys Glu Val Leu Gly Thr Val Leu Ala Leu Asp Tyr
450   455   460
Pro Ala Glu Ala Thr Gly Tyr Phe Ser Gln Tyr Arg Asp His Leu Asn
465   470   475   480
Arg Phe Phe Leu Glu Arg Gly Val Leu Leu Arg Pro Leu Gly Asn Thr
485   490   495
Leu Tyr Val Leu Pro Pro Tyr Cys Ile Gln Glu Glu Asp Leu Arg Ile
500   505   510
Ile Tyr Ser His Leu Gln Asp Ala Leu Cys Leu Gln Pro Gln
515   520   525

        <210> 1043
        <211> 232
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1043
Asn Arg Ser Pro Phe Thr Tyr Phe Arg Ala Asn Phe Phe Met Gln Arg
1   5   10   15
Ile Ile Ile Val Gly Ile Asp Thr Gly Val Gly Lys Thr Ile Val Ser
            20   25   30
Ala Ile Leu Ala Arg Ala Leu Asn Ala Glu Tyr Trp Lys Pro Ile Gln
    35   40   45
Ala Gly Asn Leu Glu Asn Ser Asp Ser Asn Ile Val His Glu Leu Ser
    50   55   60
Gly Ala Tyr Cys His Pro Glu Ala Tyr Arg Leu His Lys Pro Leu Ser
65   70   75   80
Pro His Lys Ala Ala Gln Ile Asp Asn Val Ser Ile Glu Glu Ser His
            85   90   95
Ile Cys Ala Pro Lys Thr Thr Ser Asn Leu Ile Ile Glu Thr Ser Gly
            100   105   110

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Gly Phe Leu Ser Pro Cys Thr Ser Lys Arg Leu Gln Gly Asp Val Phe
        115                 120                 125
Ser Ser Trp Ser Cys Ser Trp Ile Leu Val Ser Gln Ala Tyr Leu Gly
        130                 135                 140
Ser Ile Asn His Thr Cys Leu Thr Val Glu Ala Met Arg Ser Arg Asn
145                 150                 155                 160
Leu Asn Ile Leu Gly Met Val Val Asn Gly Tyr Pro Glu Asp Glu Glu
                165                 170                 175
His Trp Leu Thr Gln Glu Ile Lys Leu Pro Ile Ile Gly Thr Leu Ala
                180                 185                 190
Lys Glu Lys Glu Ile Thr Lys Thr Ile Ile Ser Cys Tyr Ala Glu Gln
                195                 200                 205
Trp Lys Glu Val Trp Thr Ser Asn His Gln Gly Ile Gln Gly Val Ser
        210                 215                 220
Gly Thr Pro Ser Leu Asn Leu His
225                 230
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        <400> 1044
Pro Met Leu Cys Gln Gln Phe Leu Ile Glu Ala Leu Ala Arg Arg Lys
1                 5                 10                  15
Ser Lys His Thr Tyr Arg Ser Leu Ser Leu Asn Ser His Leu Ile Asp
        20                  25                  30
Phe Thr Ser Asn Asp Tyr Leu Gly Phe Ala Ser Ser Pro Glu Leu Arg
        35                  40                  45
Lys Glu Tyr Ile Thr Lys Leu His Ala Ile Glu Ser Leu Gly Ala Thr
    50                  55                  60
Gly Ser Arg Leu Leu Thr Gly His Ser Gln Leu Cys Gln Arg Ile Glu
65                  70                  75                  80
Glu Gln Leu Ala Ala Tyr His Asn Phe Glu Ser Cys Leu Ile Phe Asn
                85                  90                  95
Thr Gly Tyr Thr Ala Asn Leu Gly Leu Leu Tyr Ala Leu Ala Thr Asp
                100                 105                 110
Gln Asp Arg Ile Leu His Asp Leu Tyr Ile His Ala Ser Ile Tyr Asp
        115                 120                 125
Gly Ile Arg Leu Ser Lys Ala Gln Ser Phe Pro Phe Asn His Asn Asp
        130                 135                 140
Leu Asn His Leu Glu Lys Arg Leu Ala Ser Ser His Leu Gly Arg Thr
145                 150                 155                 160
Phe Val Cys Val Glu Ser Val Tyr Ser Leu His Gly Ser Val Ala Pro
                165                 170                 175
Leu Gln Ala Ile Ser Glu Leu Cys Glu Arg Tyr Ser Ala Tyr Leu Ile
                180                 185                 190
Val Asp Glu Ala His Ala Val Gly Val Phe Gly Asp Gln Gly Glu Gly
                195                 200                 205
Leu Val Ser Ala Leu Gly Leu Gln Asp Lys Val Leu Ala Thr Val Tyr
        210                 215                 220
Thr Phe Gly Lys Ala Leu Gly Thr His Gly Ala Ala Ile Ala Gly Ser
225                 230                 235                 240
Ser Ile Leu Lys Asp Tyr Leu Ile Asn Phe Cys Arg Pro Phe Ile Tyr
                245                 250                 255
Thr Thr Ala Gln Pro Pro His Ala Leu Thr Ala Ile Glu Leu Ala Tyr
                260                 265                 270
Glu His Asn Gln Arg Ala Phe Asn Gln Arg Glu His Leu Ser Ala Leu
                275                 280                 285
Ile His His Phe Arg Glu Lys Ala Gln Asn Leu Gly Leu Gln Leu Met
        290                 295                 300
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1236

Lys Asp Asn Thr Thr Thr Pro Ile Gln Ser Ile Cys Val Ser Gly Ser
305   310   315   320
His Arg Ala Arg Gln Ala Ala Leu Gln Ile Gln Asn Ser Gly Tyr Asp
                325   330   335
Val Arg Pro Ile Val Ser Pro Thr Val Lys Gln Arg Glu Glu Leu Leu
                340   345   350
Arg Ile Cys Leu His Ala Phe Asn Thr Lys Asn Glu Ile Asp His Leu
                355   360   365
Leu His Thr Leu Glu Gln Ile Phe Leu Cys Asn Val Ser Ser Leu
370   375   380

<210> 1045
<211> 334
<212> PRT
<213> Chlamydia pneumoniae

<400> 1045
Ala Lys His Met Arg Glu Glu Thr Val Ser Trp Ser Leu Glu Asp Ile
1   5   10   15
Arg Glu Ile Tyr His Thr Pro Val Phe Glu Leu Ile His Lys Ala Asn
                20   25   30
Ala Ile Leu Arg Ser Asn Phe Leu His Ser Glu Leu Gln Thr Cys Tyr
                35   40   45
Leu Ile Ser Ile Lys Thr Gly Gly Cys Val Glu Asp Cys Ala Tyr Cys
50   55   60
Ala Gln Ser Ser Arg Tyr His Thr His Val Thr Pro Glu Pro Met Met
65   70   75   80
Lys Ile Val Asp Val Val Glu Arg Ala Lys Arg Ala Val Glu Leu Gly
                85   90   95
Ala Thr Arg Val Cys Leu Gly Ala Ala Trp Arg Asn Ala Lys Asp Asp
                100   105   110
Arg Tyr Phe Asp Arg Val Leu Ala Met Val Lys Ser Ile Thr Asp Leu
                115   120   125
Gly Ala Glu Val Cys Cys Ala Leu Gly Met Leu Ser Glu Glu Gln Ala
                130   135   140
Lys Lys Leu Tyr Asp Ala Gly Leu Tyr Ala Tyr Asn His Asn Leu Asp
145   150   155   160
Ser Ser Pro Glu Phe Tyr Glu Thr Ile Ile Thr Thr Arg Ser Tyr Glu
                165   170   175
Asp Arg Leu Asn Thr Leu Asp Val Val Asn Lys Ser Gly Ile Ser Thr
                180   185   190
Cys Cys Gly Gly Ile Val Gly Met Gly Glu Ser Glu Glu Asp Arg Ile
                195   200   205
Lys Leu Leu His Val Leu Ala Thr Arg Asp His Ile Pro Glu Ser Val
210   215   220
Pro Val Asn Leu Leu Trp Pro Ile Asp Gly Thr Pro Leu Gln Asp Gln
225   230   235   240
Pro Pro Ile Ser Phe Trp Glu Val Leu Arg Thr Ile Ala Thr Ala Arg
                245   250   255
Val Val Phe Pro Arg Ser Met Val Arg Leu Ala Ala Gly Arg Ala Phe
                260   265   270
Leu Thr Val Glu Gln Gln Thr Leu Cys Phe Leu Ala Gly Ala Asn Ser
                275   280   285
Ile Phe Tyr Gly Asp Lys Leu Leu Thr Val Glu Asn Asn Asp Ile Asp
                290   295   300
Glu Asp Ala Glu Met Ile Lys Leu Leu Gly Leu Ile Pro Arg Pro Ser
305   310   315   320
Phe Gly Ile Glu Arg Gly Asn Pro Cys Tyr Ala Asn Asn Ser
                325   330

1237

<210> 1046
<211> 234
<212> PRT
<213> Chlamydia pneumoniae

<400> 1046
Gly Thr Leu Pro Met Asn Thr Ser His Arg Lys Thr Leu Val Phe Ser
1   5   10   15
Tyr Leu Ser Ser Thr Phe Thr Leu Leu Leu Val Leu Ser Asn Leu Val
            20   25   30
Leu Ser Ser Lys Leu Ile Pro Thr Thr Phe Phe Asn Phe Ile Ile Pro
        35   40   45
Gly Gly Leu Ile Leu Tyr Pro Leu Thr Phe Leu Ile Ser Asp Val Val
    50   55   60
Asn Glu Ile Phe Gly Pro Lys Lys Ala Arg Val Met Ile Phe Ser Ala
65   70   75   80
Phe Ile Ala Asn Leu Leu Ala Ser Ser Ile Val Gln Ile Phe Met Phe
                85   90   95
Phe Pro Val Ala Ser Pro Glu Met Gln Thr Ala Trp His Cys Leu Phe
            100   105   110
Asp Leu Ser Pro Leu Arg Phe Leu Ala Ser Leu Leu Ala Phe Ile Val
        115   120   125
Ser Gln Gln Leu Asp Ile Val Leu Tyr Thr Phe Phe Lys Asn Arg Thr
    130   135   140
Pro Asn Ser Ser Leu Trp Leu Arg Ser Asn Gly Ser Thr Trp Ile Ser
145   150   155   160
Gln Ile Pro Asp Thr Phe Ile Val Asp Thr Cys Ile Leu Tyr Phe Gly
                165   170   175
Met Gly Leu Ser Phe Pro Gln Thr Leu Asn Ile Met Phe Tyr Ser Tyr
            180   185   190
Ile Tyr Lys Ile Thr Phe Cys Val Leu Thr Thr Pro Leu Phe Tyr Leu
        195   200   205
Ala Val Asn Thr Ile Arg Lys Phe Leu Gly Met Pro Ser Thr Lys Ile
    210   215   220
Ala Asn Thr Val Pro Leu Ile Asn Gln Pro
225   230

<210> 1047
<211> 362
<212> PRT
<213> Chlamydia pneumoniae

<400> 1047
Val His Tyr Cys Glu Arg Thr Leu Asp Pro Lys Tyr Ile Leu Lys Ile
1   5   10   15
Ala Leu Lys Leu Arg Gln Ser Leu Ser Leu Phe Phe Gln Asn Ser Gln
            20   25   30
Ser Leu Gln Arg Ala Tyr Ser Thr Pro Tyr Ser Tyr Tyr Arg Ile Ile
        35   40   45
Leu Gln Lys Glu Asn Lys Glu Lys Gln Ala Leu Ala Arg His Lys Cys
    50   55   60
Ile Ser Ile Leu Glu Phe Phe Lys Asn Leu Leu Phe Val His Leu Leu
65   70   75   80
Ser Leu Ser Lys Asn Gln Arg Glu Gly Cys Ser Thr Asp Met Ala Val
                85   90   95
Val Ser Thr Pro Phe Phe Asn Arg Asn Leu Trp Tyr Arg Leu Leu Ser
            100   105   110
Ser Arg Phe Ser Leu Trp Lys Ser Tyr Cys Pro Arg Phe Phe Leu Asp
        115   120   125
Tyr Leu Glu Ala Phe Gly Leu Leu Ser Asp Phe Leu Asp His Gln Ala
    130   135   140

Val Ile Lys Phe Phe Glu Leu Glu Thr His Phe Ser Tyr Tyr Pro Val
145   150   155   160
Ser Gly Phe Val Ala Pro His Gln Tyr Leu Ser Leu Leu Gln Asp Arg
                165   170   175
Tyr Phe Pro Ile Ala Ser Val Met Arg Thr Leu Asp Lys Asp Asn Phe
                180   185   190
Ser Leu Thr Pro Asp Leu Ile His Asp Leu Leu Gly His Val Pro Trp
                195   200   205
Leu Leu His Pro Ser Phe Ser Glu Phe Phe Ile Asn Met Gly Arg Leu
        210   215   220
Phe Thr Lys Val Ile Glu Lys Val Gln Ala Leu Pro Ser Lys Lys Gln
225   230   235   240
Arg Ile Gln Thr Leu Gln Ser Asn Leu Ile Ala Ile Val Arg Cys Phe
                245   250   255
Trp Phe Thr Val Glu Ser Gly Leu Ile Glu Asn His Glu Gly Arg Lys
                260   265   270
Ala Tyr Gly Ala Val Leu Ile Ser Ser Pro Gln Glu Leu Gly His Ala
                275   280   285
Phe Ile Asp Asn Val Arg Val Leu Pro Leu Glu Leu Asp Gln Ile Ile
        290   295   300
Arg Leu Pro Phe Asn Thr Ser Thr Pro Gln Glu Thr Leu Phe Ser Ile
305   310   315   320
Arg His Phe Asp Glu Leu Val Glu Leu Thr Ser Lys Leu Glu Trp Met
                325   330   335
Leu Asp Gln Gly Leu Leu Glu Ser Ile Pro Leu Tyr Asn Gln Glu Lys
                340   345   350
Tyr Leu Ser Gly Phe Glu Val Leu Cys Gln
        355   360

        <210> 1048
        <211> 269
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1048
Phe Gly Ser Arg Asn Met Gly Ser Ser Met His Val Gly Val Ile Gly
1   5   10   15
Cys Ser Gly Arg Thr Gly Lys Val Ile Val Ser Ala Leu Glu Gln Ser
                20   25   30
Ser Glu Tyr Thr Leu Gly Pro Gly Phe Ser Arg Ser Ser Ala Leu Thr
        35   40   45
Leu Phe Gln Val Ile Ala His Asn Asp Val Leu Val Asp Phe Ser His
        50   55   60
Pro Leu Leu Thr Lys Glu Val Val Ala His Leu Leu Ile Ser Pro Lys
65   70   75   80
Pro Leu Ile Ile Gly Thr Thr Gly Phe Pro Gly Lys Cys Lys Glu Ala
                85   90   95
His Asp Ser Leu Glu Glu Leu Thr His Ile Val Pro Val Val Val Cys
                100   105   110
Pro Asn Ala Ser Leu Gly Ala Tyr Ile His Lys Arg Leu Val Met Leu
        115   120   125
Leu Ser Gln Leu Cys Asn Pro Gln Phe Asp Ile Arg Ile Arg Glu Thr
        130   135   140
His His Arg Tyr Lys Lys Asp Ser Leu Ser Gly Thr Ala Gln Asp Leu
145   150   155   160
Leu Asp Thr Ile Gln Gln Val Lys Gln Glu Asp Trp Gly Glu Glu Tyr
                165   170   175
Glu Val Gly Gln Arg Asp Ser Ser Lys Lys Thr Ile Glu Val Gln Ser
                180   185   190
Ser Arg Val Gly Asp Ile Pro Gly Glu His Glu Val Ala Phe Ile Ser
        195   200   205

                                    1239

Ser Gly Glu Gln Ile Leu Val Arg His Thr Val Phe Ser Arg Asn Val
210   215   220
Phe Gly Arg Gly Ile Leu Ser Ile Leu Asp Trp Leu Lys Thr Leu Asn
225   230   235   240
Pro Gln Pro Gly Leu Tyr Ser Leu Gly Asp Thr Leu Glu Leu Val Leu
245   250   255
Arg Asn Glu His Cys Leu Leu Lys Lys Thr Thr Asp His
260   265

<210> 1049
<211> 339
<212> PRT
<213> Chlamydia pneumoniae

<400> 1049
Asp Gly Glu Arg Lys Gly Met Arg Ile Ala Val Leu Gly Val Thr Gly
1   5   10   15
Leu Val Gly Gln Lys Phe Val Ala Leu Leu His Lys Trp Tyr Arg Asp
20   25   30
Trp Val Ile Ala Glu Val Val Ala Ser Asn Ser Lys Tyr Gly Gln Ser
35   40   45
Tyr Gly Asp Ala Cys Ile Trp Gln Glu Pro Ile Gly Pro Met Pro Glu
50   55   60
Met Val Arg Asp Leu Pro Ile Arg Lys Ile Glu Glu Val Gln Ser Asp
65   70   75   80
Ile Val Val Ser Phe Leu Pro Ser Ser Ala Glu Ser Met Glu Ala Tyr
85   90   95
Cys Leu Ser Gln Gly Lys Val Val Phe Ser Asn Ala Ser Thr Tyr Arg
100   105   110
Met His Ser Ser Val Pro Ile Ile Ile Pro Glu Val Asn Ser Asp His
115   120   125
Phe Gln Leu Leu Glu Glu Gln Pro Tyr Pro Gly Lys Ile Ile Thr Ser
130   135   140
Pro Asn Cys Cys Val Ser Gly Ile Thr Leu Ala Leu Ala Pro Leu Arg
145   150   155   160
Lys Phe Ser Leu Asp His Val His Ile Val Thr Leu Gln Ser Ala Ser
165   170   175
Gly Ala Gly Tyr Pro Gly Val Pro Ser Leu Asp Leu Leu Ala Asn Thr
180   185   190
Val Pro His Ile Val Gly Glu Glu Glu Lys Ile Leu Arg Glu Thr Val
195   200   205
Lys Ile Leu Gly Ser Ser Lys Gln Pro Leu Pro Cys Lys Leu Ser Val
210   215   220
Thr Val His Arg Val Pro Val Ala Tyr Gly His Thr Leu Ser Leu His
225   230   235   240
Val Thr Phe Ser Lys Asp Val Asp Leu Asp Glu Ile Leu Tyr Ser Tyr
245   250   255
Gln Glu Lys Asn Lys Glu Phe Pro Asn Thr Tyr Gln Leu Tyr Asp Asn
260   265   270
Pro Trp Ser Pro Gln Ala Arg Lys His Leu Ser His Asp Asp Met Arg
275   280   285
Val His Leu Gly Pro Ile Thr Tyr Gly Gly Asp Phe Arg Thr Ile Lys
290   295   300
Met Asn Val Leu Ile His Asn Leu Val Arg Gly Ala Ala Gly Thr Leu
305   310   315   320
Leu Ala Ser Met Glu Asn Tyr Phe Phe Asp Tyr Leu Lys Arg Glu Met
325   330   335
Cys Leu Arg

<210> 1050
<211> 443
<212> PRT
<213> Chlamydia pneumoniae

<400> 1050

```
Glu Gly Asn Val Ser Lys Ile Val Tyr Lys Phe Gly Gly Thr Ser Leu
1               5                   10                  15
Ala Thr Ala Glu Asn Ile Cys Leu Val Cys Asp Ile Ile Cys Lys Asp
            20                  25                  30
Lys Pro Ser Phe Val Val Val Ser Ala Ile Ala Gly Val Thr Asp Leu
            35                  40                  45
Leu Val Asp Phe Cys Ser Ser Ser Leu Arg Glu Arg Glu Glu Val Leu
    50                  55                  60
Arg Lys Ile Glu Gly Lys His Glu Glu Ile Val Lys Asn Leu Ala Ile
65                  70                  75                  80
Pro Phe Pro Val Ser Thr Trp Thr Ser Arg Leu Leu Pro Tyr Leu Gln
                85                  90                  95
His Leu Glu Ile Ser Asp Leu Asp Phe Ala Arg Ile Leu Ser Leu Gly
            100                 105                 110
Glu Asp Ile Ser Ala Ser Leu Val Arg Ala Val Cys Ser Thr Arg Gly
            115                 120                 125
Trp Asp Leu Gly Phe Leu Glu Ala Arg Ser Val Ile Leu Thr Asp Asp
    130                 135                 140
Ser Tyr Arg Arg Ala Ser Pro Asn Leu Asp Leu Met Lys Ala His Trp
145                 150                 155                 160
His Gln Leu Glu Leu Asn Gln Pro Ser Tyr Ile Ile Gln Gly Phe Ile
            165                 170                 175
Gly Ser Asn Gly Leu Gly Glu Thr Val Leu Leu Gly Arg Gly Gly Ser
            180                 185                 190
Asp Tyr Ser Ala Thr Leu Ile Ala Glu Leu Ala Arg Ala Thr Glu Val
            195                 200                 205
Arg Ile Tyr Thr Asp Val Asn Gly Ile Tyr Thr Met Asp Pro Lys Val
    210                 215                 220
Ile Ser Asp Ala Gln Arg Ile Pro Glu Leu Ser Phe Glu Glu Met Gln
225                 230                 235                 240
Asn Leu Ala Ser Phe Gly Ala Lys Val Leu Tyr Pro Pro Met Leu Phe
                245                 250                 255
Pro Cys Met Arg Ala Gly Ile Pro Ile Phe Val Thr Ser Thr Phe Asp
            260                 265                 270
Pro Glu Lys Gly Gly Thr Trp Val Tyr Ala Val Asp Lys Ser Val Ser
            275                 280                 285
Tyr Glu Pro Arg Ile Lys Ala Leu Ser Leu Ser Gln Tyr Gln Ser Phe
    290                 295                 300
Cys Ser Val Asp Tyr Thr Val Leu Gly Cys Gly Gly Leu Glu Glu Ile
305                 310                 315                 320
Leu Gly Ile Leu Glu Ser His Gly Ile Asp Pro Glu Leu Met Ile Ala
            325                 330                 335
Gln Asn Asn Val Val Gly Phe Val Met Asp Asp Asp Ile Ile Ser Gln
            340                 345                 350
Glu Ala Gln Glu His Leu Val Asp Val Leu Ser Leu Ser Ser Val Thr
            355                 360                 365
Arg Leu His His Ser Val Ala Leu Ile Thr Met Ile Gly Asp Asn Leu
    370                 375                 380
Ser Ser Pro Lys Val Val Ser Thr Ile Thr Glu Lys Leu Arg Gly Phe
385                 390                 395                 400
Gln Gly Pro Val Phe Cys Phe Cys Gln Ser Ser Met Ala Leu Ser Phe
            405                 410                 415
Val Val Ala Ser Glu Leu Ala Glu Gly Ile Ile Glu Glu Leu His Asn
            420                 425                 430
```

Asp Tyr Val Lys Gln Lys Ala Ile Val Ala Thr
        435   440

        <210> 1051
        <211> 305
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1051
Leu Cys Lys Thr Lys Ser Tyr Ser Arg His Val Gly Arg Ile Met His
1   5   10   15
Leu Leu Thr Ala Thr Val Thr Pro Phe Phe Pro Asn Gly Thr Ile Asp
            20   25   30
Phe Ala Ser Leu Glu Arg Leu Leu Ser Phe Gln Asp Ala Val Gly Asn
            35   40   45
Gly Val Val Leu Leu Gly Ser Thr Gly Glu Gly Leu Ser Leu Thr Lys
50   55   60
Lys Glu Lys Gln Ala Leu Ile Cys Phe Ala Cys Asp Leu Gln Leu Lys
65   70   75   80
Val Pro Leu Phe Val Gly Thr Ser Gly Thr Leu Leu Glu Glu Val Leu
            85   90   95
Asp Trp Ile His Phe Cys Asn Asp Leu Pro Ile Ser Gly Phe Leu Met
            100   105   110
Thr Thr Pro Ile Tyr Thr Lys Pro Lys Leu Cys Gly Gln Ile Leu Trp
            115   120   125
Phe Glu Ala Val Leu Asn Ala Ala Lys His Pro Ala Ile Leu Tyr Asn
            130   135   140
Ile Pro Ser Arg Ala Ala Thr Pro Leu Tyr Leu Asp Thr Val Lys Ala
145   150   155   160
Leu Ala His His Pro Gln Phe Leu Gly Ile Lys Asp Ser Gly Gly Ser
                165   170   175
Val Glu Glu Phe Gln Ser Tyr Lys Ser Ile Ala Pro His Ile Gln Leu
            180   185   190
Tyr Cys Gly Asp Asp Val Phe Trp Ser Glu Met Ala Ala Cys Gly Ala
            195   200   205
His Gly Leu Ile Ser Val Leu Ser Asn Ala Trp Pro Glu Glu Ala Arg
    210   215   220
Glu Tyr Val Leu Asn Pro Gln Glu Gln Asp Tyr Arg Ser Leu Trp Met
225   230   235   240
Glu Thr Cys Arg Trp Val Tyr Thr Thr Thr Asn Pro Ile Gly Ile Lys
            245   250   255
Ala Ile Leu Ala Tyr Lys Lys Ala Ile Thr His Ala Gln Leu Arg Leu
            260   265   270
Pro Leu Ser Ile Glu Asp Phe Asp Leu Glu Asn Val Ser Pro Ala Val
            275   280   285
Glu Ser Met Leu Ala Trp Pro Lys Leu Arg Thr Ser Val Phe Ser Tyr
    290   295   300
Ser
305

        <210> 1052
        <211> 105
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1052
Phe Phe Met Thr Pro Lys Ser Ile Gln Gln Leu His Leu Ile Lys Thr
1   5   10   15
Ile Asp Pro Val Arg Lys Ile Ser Pro Val Thr Thr Lys Lys Ser Ser
            20   25   30

Phe Phe Arg Gln Ser Leu Leu Arg Phe Leu Glu Leu Phe Trp Met Phe
        35   40   45
Leu Tyr Cys Ile Arg Ser Ile Arg Phe His Cys Val His Ile Ala Thr
    50   55   60
Phe Ile Cys Arg Gly Leu Ile Leu Phe Leu Thr Thr Leu Phe Leu Ser
65   70   75   80
Met Ile Cys Ile Leu His Phe Ile Thr Leu Pro Trp Ile Cys Lys Glu
                85   90   95
Asp Pro Arg Ile Ile Arg Lys Asn Lys
            100   105

        <210> 1053
        <211> 256
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1053
Phe Phe Ile Gln Lys Met Lys Tyr Asn Ser Arg Glu Lys Ile Lys Ser
 1   5   10   15
Ala Leu Arg Ile Cys Ser Ser Tyr Cys Ile Thr Val Phe Arg Asn Asn
            20   25   30
Phe Ser Leu Ser Cys Tyr Asp Lys Ile Phe Tyr Ser Leu Ser Cys Tyr
        35   40   45
Val Phe Asn Gly Pro Asn Ser Ile Gly Arg Cys Arg Ser Phe Cys Phe
    50   55   60
Phe Arg Gly Lys Lys Thr Glu Val Glu Thr Lys Glu Val Lys Ile Lys
65   70   75   80
Asp Glu Ile Arg Pro Ser Leu Glu Gly Asn Asp Pro Val Lys Val Ala
            85   90   95
Glu Ser Phe Pro Lys Arg Arg Ala Ala Leu Glu Ser Leu Ser Ser Gln
            100   105   110
Ser Ser Ile Gly Asn Leu Cys Ala Ile Ser Asn Phe Leu Asp Ser Gln
        115   120   125
Met Leu Ser Arg Asn Phe Ser Lys Glu Ile Trp Gly Ser Thr Ile Phe
    130   135   140
Thr Arg Ser Lys Ser Thr Cys Asp Ala Glu Gly Ser Glu Pro Phe Arg
145   150   155   160
Tyr Thr Ala Cys Gly Tyr Leu Ala Gly Leu Arg Ser Lys Leu Ala Gly
                165   170   175
Ser Tyr Glu Leu Gly Val Thr Ala Gly Leu Leu Gln Gly Arg Leu Lys
            180   185   190
Asp Val Ser Asp Ser His Arg Thr Arg Ala Thr Ser Ser Ile Leu Ser
            195   200   205
Val His Gly Ser Met Val Thr Arg Pro Leu Ser Cys Thr Lys Tyr Ile
    210   215   220
Val Gly Lys Ala Arg Pro Leu Leu Phe Phe Phe Arg Leu Thr Ser Asp
225   230   235   240
Val Arg Arg Asp Leu Lys Lys Lys Phe Arg Leu Glu Phe Cys Lys Asp
                245   250   255

        <210> 1054
        <211> 188
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1054
Lys Lys Ser Ser Asp Leu Asn Phe Ala Lys Ile Asp His Asn His Leu
 1   5   10   15
Tyr Leu Thr Cys Leu Gly Asp Leu Gly Val Ala Cys Pro Ile Leu Ser
            20   25   30

                            1243

```
Thr Asp Cys Leu Pro Asn Tyr Ser Glu Lys Ala Ser His Glu Val Leu
        35              40              45
Val Tyr Ser Lys Phe Arg Cys Ile Ser Gly Glu Pro Ser Arg Leu Ala
        50              55              60
Thr Ser Gly Asn Asp Thr Tyr Tyr Ser Ile Val Ser Leu Pro Ile Gly
65              70              75              80
Leu Arg Tyr Glu Val Thr Ser Pro Ser Gly Arg His Asp Phe Asn Ile
                85              90              95
Asp Met His Val Ala Pro Lys Ile Gly Ala Val Leu Ser His Gly Thr
            100             105             110
Arg Glu Ala Lys Glu Ile Pro Gly Ser Ser Lys Asp Tyr Ala Phe Phe
            115             120             125
Ser Leu Thr Ala Arg Glu Ser Leu Met Ile Ser Glu Lys Leu Ala Met
        130             135             140
Thr Phe Gln Val Ser Glu Val Ile Gln Asn Cys Tyr Ser Gln Cys Thr
145             150             155             160
Lys Val Thr Lys Thr Asn Leu Lys Glu Gln Tyr Arg His Leu Ser His
            165             170             175
Asn Thr Gly Phe Glu Leu Ser Val Lys Ser Ala Phe
            180             185


        <210> 1055
        <211> 819
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1055
Ser Arg Trp His His Arg Phe Ile Met Gln Val Leu Leu Ser Pro Gln
1               5               10              15
Leu Pro Pro Pro Pro Gln His Ser Val Gly Ser Ile Ser Ser Pro Ser
            20              25              30
Lys Leu Arg Val Leu Ala Ile Thr Phe Leu Val Phe Gly Met Leu Leu
        35              40              45
Leu Ile Ser Gly Ala Leu Phe Leu Thr Leu Gly Ile Pro Gly Leu Ser
        50              55              60
Ala Ala Ile Ser Phe Gly Leu Gly Ile Gly Leu Ser Ala Leu Gly Gly
65              70              75              80
Val Leu Met Ile Ser Gly Leu Leu Cys Leu Leu Val Lys Arg Glu Ile
                85              90              95
Pro Thr Val Arg Pro Glu Glu Ile Pro Glu Gly Val Ser Leu Ala Pro
            100             105             110
Ser Glu Glu Pro Ala Leu Gln Ala Ala Gln Lys Thr Leu Ala Gln Leu
            115             120             125
Pro Lys Glu Leu Asp Gln Leu Asp Thr Asp Ile Gln Glu Val Phe Ala
        130             135             140
Cys Leu Arg Lys Leu Lys Asp Ser Lys Tyr Glu Ser Arg Ser Phe Leu
145             150             155             160
Asn Asp Ala Lys Lys Glu Leu Arg Val Phe Asp Phe Val Val Glu Asp
            165             170             175
Thr Leu Ser Glu Ile Phe Glu Leu Arg Gln Ile Val Ala Gln Glu Gly
            180             185             190
Trp Asp Leu Asn Phe Leu Ile Asn Gly Gly Arg Ser Leu Met Met Thr
        195             200             205
Ala Glu Ser Glu Ser Leu Asp Leu Phe His Val Ser Lys Arg Leu Gly
        210             215             220
Tyr Leu Pro Ser Gly Asp Val Arg Gly Glu Gly Leu Lys Lys Ser Ala
225             230             235             240
Lys Glu Ile Val Ala Arg Leu Met Ser Leu His Cys Glu Ile His Lys
            245             250             255
Val Ala Val Ala Phe Asp Arg Asn Ser Tyr Ala Met Ala Glu Lys Ala
        260             265             270
```

1244

```
Phe Ala Lys Ala Leu Gly Ala Leu Glu Glu Ser Val Tyr Arg Ser Leu
        275                 280                 285
Thr Gln Ser Tyr Arg Asp Lys Phe Leu Glu Ser Glu Arg Ala Lys Ile
        290                 295                 300
Pro Trp Asn Gly His Ile Thr Trp Leu Arg Asp Asp Ala Lys Ser Gly
305                 310                 315                 320
Cys Ala Glu Lys Lys Leu Arg Asp Ala Glu Glu Arg Trp Lys Lys Phe
            325                 330                 335
Arg Lys Ala Val Phe Trp Val Glu Glu Asp Gly Gly Phe Asp Ile Asn
            340                 345                 350
Asn Leu Leu Gly Asp Trp Gly Thr Val Leu Asp Pro Tyr Arg Gln Glu
            355                 360                 365
Arg Met Asp Glu Ile Thr Phe His Glu Leu Tyr Glu Lys Thr Thr Phe
        370                 375                 380
Leu Lys Arg Leu His Arg Lys Cys Ala Leu Ala Lys Thr Thr Phe Glu
385                 390                 395                 400
Lys Lys Arg Ser Lys Lys Asn Leu Gln Ala Val Glu Glu Ala Asn Ala
            405                 410                 415
Arg Arg Leu Lys Tyr Val Arg Asp Trp Tyr Asp Gln Glu Phe Gln Lys
            420                 425                 430
Ala Gly Glu Arg Leu Glu Lys Leu His Ala Leu Tyr Pro Glu Val Ser
            435                 440                 445
Val Ser Ile Arg Glu Asn Lys Ile Gln Glu Thr Arg Ser Asn Leu Glu
        450                 455                 460
Lys Ala Tyr Glu Ala Ile Glu Glu Asn Tyr Arg Cys Cys Val Arg Glu
465                 470                 475                 480
Gln Glu Asp Tyr Trp Lys Glu Glu Glu Lys Arg Glu Ala Glu Phe Arg
            485                 490                 495
Glu Arg Gly Asn Lys Ile Leu Ser Pro Glu Glu Leu Glu Ser Ser Leu
            500                 505                 510
Glu Gln Phe Asp His Gly Leu Lys Asn Phe Ser Glu Lys Leu Met Glu
            515                 520                 525
Leu Glu Gly His Ile Leu Lys Leu Gln Lys Glu Ala Thr Ala Glu Val
        530                 535                 540
Glu Asn Lys Ile Leu Ser Asp Ala Glu Ser Arg Leu Glu Ile Val Phe
545                 550                 555                 560
Glu Asp Val Lys Glu Met Pro Cys Arg Ile Glu Glu Ile Glu Lys Thr
            565                 570                 575
Leu Arg Met Ala Glu Leu Pro Leu Leu Pro Thr Lys Lys Ala Phe Glu
        580                 585                 590
Lys Ala Cys Ser Gln Tyr Asn Ser Cys Ala Glu Met Leu Glu Lys Val
        595                 600                 605
Lys Pro Tyr Cys Lys Glu Ser Leu Ala Tyr Val Thr Ser Lys Glu Arg
    610                 615                 620
Leu Val Ser Leu Asp Glu Asp Leu Arg Arg Ala Tyr Thr Glu Cys Gln
625                 630                 635                 640
Lys Arg Phe Gln Gly Asp Ser Gly Leu Glu Ser Glu Val Arg Ala Cys
            645                 650                 655
Arg Glu Gln Leu Arg Glu Arg Ile Gln Glu Phe Glu Thr Gln Gly Leu
            660                 665                 670
Asp Leu Val Glu Lys Glu Leu Leu Cys Val Ser Ser Arg Leu Arg Asn
        675                 680                 685
Thr Glu Cys Asp Cys Val Ser Gly Val Lys Lys Glu Ala Pro Pro Gly
        690                 695                 700
Lys Lys Phe Tyr Ala Gln Tyr Tyr Asp Glu Ile Tyr Arg Val Arg Val
705                 710                 715                 720
Gln Ser Arg Trp Met Thr Met Ser Glu Arg Leu Arg Glu Gly Val Gln
            725                 730                 735
Ala Cys Asn Lys Met Leu Lys Ala Gly Leu Ser Glu Glu Asp Lys Val
            740                 745                 750
```

Leu Lys Glu Glu Glu Tyr Trp Leu Tyr Arg Glu Glu Arg Lys Asn Lys
        755   760   765
Glu Lys Arg Leu Val Gly Thr Lys Ile Val Ala Thr Gln Gln Arg Val
        770   775   780
Ala Ala Phe Glu Ser Ile Glu Val Pro Glu Ile Pro Glu Ala Pro Glu
785   790   795   800
Glu Lys Pro Ser Leu Leu Asp Lys Ala Arg Ser Leu Phe Thr Arg Glu
                805   810   815

Asp His Thr

<210> 1056
<211> 313
<212> PRT
<213> Chlamydia pneumoniae

<400> 1056
Cys Lys Tyr Leu Tyr His His Ser Tyr Pro Pro Pro Pro Asp His Ser
1   5   10   15
Val Gly Ala Phe Phe Cys Leu Ser Lys Phe Arg Val Leu Ala Ile Thr
        20   25   30
Phe Leu Val Leu Gly Val Leu Phe Leu Ile Ser Gly Ala Leu Phe Leu
        35   40   45
Thr Leu Gly Ile Ser Gly Leu Ser Ala Ala Ile Ser Phe Gly Leu Gly
        50   55   60
Ile Gly Leu Ser Ala Leu Gly Gly Val Leu Val Val Ser Gly Leu Leu
65   70   75   80
Cys Leu Leu Ala Lys Arg Glu Val Pro Thr Val Arg Pro Glu Glu Ile
                85   90   95
Pro Glu Gly Val Ser Val Ala Pro Ser Glu Glu Pro Ala Leu Gln Ala
            100   105   110
Thr Gln Lys Thr Leu Ala Gln Leu Pro Lys Glu Leu Asp Gln Leu Asp
        115   120   125
Arg Tyr Ile Gln Glu Val Val Ser Cys Leu Gly Lys Leu Lys Asp Leu
        130   135   140
Arg Cys Glu Asp Gln Gly Leu Leu Lys Asp Ala Lys Glu Lys Leu Gln
145   150   155   160
Val Phe Asp Phe Val Trp Lys Asp Met Met Thr Glu Phe Val Glu Leu
                165   170   175
Gln Gln Ile Met Asp Gln Glu Gly Trp Tyr Leu Lys Cys Leu Ile Gln
            180   185   190
Glu Met Arg Asp Ile Gly Ser Thr Leu Phe Met Ser Gln Val Ser Leu
        195   200   205
Phe Lys Leu Trp Glu Trp Leu Gly Tyr Leu Pro Ser Gly Asp Val Arg
        210   215   220
Gly Glu Arg Leu Lys Lys Ser Ala Arg Glu Val Val Asp Arg Phe Met
225   230   235   240
Arg Arg Ile Cys Asp Thr Arg Lys Val Ala Met Thr Phe Asp Arg Asn
                245   250   255
Ala Tyr Gly Val Ala Lys Thr Ala Phe Glu Lys Ala Phe Gly Ala Leu
            260   265   270
Glu Thr Cys Val Tyr Lys Ser Met Thr Glu Ser Tyr Arg Glu Ala Phe
        275   280   285
Cys Glu Tyr Lys Lys Thr Lys Ile Leu Arg Asp Glu Glu Lys Ile Leu
        290   295   300
Arg Ile Cys Tyr Leu Glu Leu Arg Arg
305   310

1246

<210> 1057
<211> 249
<212> PRT
<213> Chlamydia pneumoniae

<400> 1057

```
Gly Glu Asp Ile Lys Asp Met Leu Ser Arg Val Glu Glu Ile Glu Met
1               5                   10                  15
Met Leu Arg Val Ile Glu Leu Pro Leu Leu Pro Ile Lys Gln Ala Leu
            20                  25                  30
Glu Lys Ala Phe Val Gln Tyr Asn Ser Tyr Lys Ala Lys Leu Thr Lys
        35                  40                  45
Val Glu Pro Cys Phe Arg Glu Ser Pro Ala Tyr Ile Thr Ser Glu Glu
    50                  55                  60
Arg Leu Gln Ser Leu Asp Gln Thr Leu Glu Arg Ala Tyr Lys Glu Tyr
65                  70                  75                  80
Gln Lys Arg Phe Gln Glu Pro Ser Arg Leu Glu Ser Glu Val Ser Gly
                85                  90                  95
Cys Arg Glu His Leu Arg Glu Gln Val Lys Gln Phe Glu Thr Gln Gly
            100                 105                 110
Leu Asp Leu Ile Lys Glu Glu Leu Ile Phe Val Ser Asp Val Leu Phe
            115                 120                 125
Arg Lys Met Val Ser Cys Leu Val Ser Thr Val His Val Pro Phe Met
        130                 135                 140
Glu Phe Tyr Tyr Glu Tyr Phe Glu Leu His Arg Leu Arg Leu Arg Ala
145                 150                 155                 160
Gln Trp Met Ala Asn Ala Glu Ile Tyr Ser Lys Val Arg Lys Ala Phe
                165                 170                 175
Pro Glu Met Leu Lys Glu Thr Leu Glu Lys Ala Lys Ala Pro Arg Glu
            180                 185                 190
Glu Glu Tyr Trp Leu Leu Cys Glu Glu Arg Lys Ser Lys Glu Lys Arg
        195                 200                 205
Leu Ile Leu Asn Lys Ile Glu Ala Ala Gln Gln Arg Val Lys Asp Leu
    210                 215                 220
Glu Pro Pro Pro Ile Lys Glu Thr Gly Lys Gln Lys Arg Lys Lys Glu
225                 230                 235                 240
Tyr Ser Phe Phe Ile Arg Leu Lys Ser
                245
```


<210> 1058
<211> 710
<212> PRT
<213> Chlamydia pneumoniae

<400> 1058

```
Ile Ile His Phe Tyr Phe Phe Asn Phe Ala Met Pro Glu Pro Leu Tyr
1               5                   10                  15
Thr Asn Lys Leu Ile Thr Glu Lys Ser Pro Tyr Leu Leu Leu Tyr Ala
            20                  25                  30
His Thr Pro Val Asn Trp Tyr Pro Trp Gly Ala Glu Ala Phe His Ile
        35                  40                  45
Ala Ala Ile Glu Asn Lys Pro Val Phe Leu Ser Ile Gly Cys Lys His
    50                  55                  60
Ser Arg Trp Cys Gln Val Met Leu Gln Glu Ser Tyr Thr Asn Pro Glu
65                  70                  75                  80
Ile Ala Ala Met Leu Asn Glu Tyr Phe Val Asn Val Lys Val Asp Lys
                85                  90                  95
Glu Glu Leu Pro Tyr Val Ala Lys Leu Tyr Gly Asp Leu Ala Gln Met
            100                 105                 110
Leu Ala Val Ser Gly Asp His Gln Glu Thr Val Ser Trp Pro Leu Asn
            115                 120                 125
```

```
Val Phe Leu Thr Pro Asp Leu Val Pro Phe Phe Ser Val Asn Tyr Leu
    130                 135                 140
Gly Asn Glu Gly Lys Leu Gly Leu Pro Ser Phe Pro Gln Ile Ile Asp
145                 150                 155                 160
Lys Leu His Phe Met Trp Glu Asp Ala Glu Glu Arg Glu Ala Leu Val
                165                 170                 175
Glu Gln Ala Met Lys Val Leu Glu Ile Ala Ser Phe Leu Glu Gly Cys
                180                 185                 190
Val Arg Lys Glu Ile Leu Asp Glu Ser Ser Leu Lys Arg Thr Val Ala
        195                 200                 205
Ala Leu Tyr Gln Asp Ile Asp Pro His Tyr Gly Gly Val Lys Ala Phe
    210                 215                 220
Pro Lys Arg Leu Pro Gly Leu Leu Leu Gln Phe Phe Leu Arg Tyr Ser
225                 230                 235                 240
Leu Glu Tyr Gln Glu Ser Arg Gly Leu Phe Phe Val Asp Arg Ser Leu
                245                 250                 255
Ser Met Val Ala Leu Gly Gly Val Arg Asp His Ile Gly Gly Gly Val
            260                 265                 270
Tyr Ser Tyr Thr Ile Asp Asp Lys Trp Leu Ile Pro Ala Phe Glu Lys
        275                 280                 285
Arg Leu Ile Asp Asn Ala Leu Met Ala Leu Asn Tyr Leu Glu Ala Trp
    290                 295                 300
Ala Cys Leu Gly Lys Glu Glu Tyr Arg Gly Ile Gly Lys Gln Ile Leu
305                 310                 315                 320
Ser Tyr Ile Leu Ser Glu Leu Tyr Ser Pro Glu Val Gly Ala Phe Tyr
                325                 330                 335
Ser Ser Glu Gln Ala Glu Asn Trp Gly Ala Gly Gly Gln Asn Phe Tyr
            340                 345                 350
Thr Trp Ser Val Glu Glu Ile Ser Asn Ala Leu Gly Glu Asp Ala Glu
            355                 360                 365
Ile Phe Cys Asp Tyr Tyr Gly Ile Ser Arg Glu Gly Phe Phe Asn Gly
    370                 375                 380
Arg Asn Ile Leu His Ile Pro Val His Arg Glu Ile Glu Glu Leu Ser
385                 390                 395                 400
Glu Lys Tyr His Arg Ser Ile Glu Ala Ile Glu Asp Ile Val Asp Arg
                405                 410                 415
Ser Arg Asp Ile Leu Lys Gly Ile Arg Ala Gln Arg Ser His Arg Ser
            420                 425                 430
Lys Asp Asp Leu Ser Leu Thr Phe Asn Asn Gly Trp Met Ile Tyr Thr
        435                 440                 445
Phe Ala Tyr Ala Gly Arg Leu Leu Gly Glu Val Glu Tyr Ile Glu Ile
    450                 455                 460
Gly Lys Lys Cys Gly Glu Phe Val Arg Asn Ser Leu Tyr Lys His His
465                 470                 475                 480
Glu Leu Tyr Arg Arg Trp Arg Glu Gly Glu Ala Lys Tyr Arg Ala Ser
                485                 490                 495
Leu Glu Asp Tyr Gly Ala Leu Ile Leu Gly Val Leu Ala Leu Tyr Glu
            500                 505                 510
Ser Gly Cys Gly Ser Phe Trp Leu Ser Phe Ala Glu Glu Leu Met Gln
        515                 520                 525
Glu Val Val Leu Ser Phe Arg Ser Glu Glu Gly Gly Phe Tyr Ser Val
    530                 535                 540
Asp Gly Arg Asp Ser Thr Leu Leu Ile Lys Gln Ser Pro Leu Ser Asp
545                 550                 555                 560
Gly Glu Thr Ile Ser Gly Asn Ala Leu Ile Cys Gln Cys Leu Leu Ser
                565                 570                 575
Leu His Leu Ile Thr Glu Lys Lys His Tyr Leu Thr Tyr Ala Glu Asp
        580                 585                 590
Ile Leu Gln Ile Ala Gln Ala Cys Ala His Thr His Lys Phe Ser Ser
    595                 600                 605
```

```
Leu Gly Leu Leu Ile Ala Ser Gln Asn Tyr Phe Ser Arg Lys His Val
    610                 615                 620
Lys Val Leu Ile Ala Leu Gly Asp Gln Glu Asp Arg Ser Pro Val Leu
625                 630                 635                 640
Lys Cys Leu Ser Gly Leu Phe Leu Pro Tyr Leu Ser Leu Ile Trp Met
                645                 650                 655
Thr Gln Glu Asn Gln Glu His Leu Glu Thr Val Leu Pro Glu Tyr Glu
                660                 665                 670
His Cys Leu Ile Pro Lys Gly Asp Cys Thr Ala Thr Thr Ile Tyr Val
            675                 680                 685
Leu Glu Val Asp Gln Cys Lys Arg Phe Lys Asp Leu Glu Leu Phe Arg
    690                 695                 700
Arg Tyr Leu Ile Ser Leu
705                 710
```

<210> 1059
<211> 365
<212> PRT
<213> Chlamydia pneumoniae

<400> 1059

```
Glu Val Met Lys Leu Tyr Gln Thr Leu Arg Gly Ile Val Leu Val Ser
  1               5                  10                  15
Thr Gly Cys Ile Phe Leu Gly Met His Gly Gly Tyr Ala Ala Glu Val
            20                  25                  30
Pro Val Thr Ser Ser Gly Tyr Glu Asn Leu Leu Glu Ser Lys Glu Gln
            35                  40                  45
Asp Pro Ser Gly Leu Ala Ile His Asp Arg Ile Leu Phe Lys Val Asp
    50                  55                  60
Glu Glu Asn Val Val Thr Ala Leu Asp Val Ile His Lys Leu Asn Leu
65                  70                  75                  80
Leu Phe Tyr Asn Ser Tyr Pro His Leu Ile Asp Ser Phe Pro Ala Arg
                85                  90                  95
Ser Gln Tyr Tyr Thr Ala Met Trp Pro Val Val Leu Glu Ser Val Ile
            100                 105                 110
Asp Glu Phe Leu Met Val Ala Asp Ala Lys Ala Lys Arg Ile Ala Thr
            115                 120                 125
Asp Pro Thr Ala Val Asn Gln Glu Ile Glu Glu Met Phe Gly Arg Asp
    130                 135                 140
Leu Ser Pro Leu Tyr Ala His Phe Glu Met Ser Pro Asn Asp Ile Phe
145                 150                 155                 160
Asn Val Ile Asp Arg Thr Leu Thr Ala Gln Arg Val Met Gly Met Met
                165                 170                 175
Val Arg Ser Lys Val Met Leu Lys Val Thr Pro Gly Lys Ile Arg Glu
            180                 185                 190
Tyr Tyr Arg Lys Leu Glu Glu Glu Ala Ser Arg Lys Val Ile Trp Lys
    195                 200                 205
Tyr Arg Val Leu Thr Ile Lys Ala Asn Thr Glu Ser Leu Ala Ser Gln
    210                 215                 220
Ile Ala Asp Lys Val Arg Ala Arg Leu Asn Glu Ala Lys Thr Trp Asp
225                 230                 235                 240
Lys Asp Arg Leu Thr Ala Leu Val Ile Ser Gln Gly Gly Gln Leu Val
                245                 250                 255
Cys Ser Glu Glu Phe Ser Arg Glu Asn Ser Glu Leu Ser Gln Ser His
                260                 265                 270
Lys Gln Glu Leu Asp Leu Ile Gly Tyr Pro Lys Glu Leu Cys Gly Leu
    275                 280                 285
Pro Lys Ala His Lys Ser Gly Tyr Lys Leu Tyr Met Leu Leu Asp Lys
    290                 295                 300
Thr Ser Gly Ser Ile Glu Pro Leu Asp Val Met Glu Ser Lys Ile Lys
305                 310                 315                 320
```

```
Gln His Leu Phe Ala Leu Glu Ala Glu Ser Val Glu Lys Gln Tyr Lys
              325                     330                     335
Asp Arg Leu Arg Lys Arg Tyr Gly Tyr Asp Ala Ser Met Ile Ala Lys
              340                     345                 350
Leu Leu Ser Glu Glu Ala Pro Pro Leu Phe Ser Leu Leu
              355·                    360             365


        <210> 1060
        <211> 277
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1060
Val Thr Arg Ser Ser Pro Ala Gln Leu Ser Arg Phe Leu Ser Glu Ile
  1              5                   10                      15
Gln Asn Lys Pro Lys Lys Ser Leu Ser Gln Asn Phe Leu Val Asp Gln
              20                  25                  30
Asn Ile Val Lys Lys Ile Val Ala Thr Ser Glu Val Ile Pro Gln Asp
          35                  40                  45
Trp Val Leu Glu Ile Gly Pro Gly Phe Gly Ala Leu Thr Glu Glu Leu
      50                  55                  60
Ile Ala Ala Gly Ala Gln Val Ile Ala Ile Glu Lys Asp Pro Met Phe
65                  70                  75                      80
Ala Pro Ser Leu Glu Glu Leu Pro Ile Arg Leu Glu Ile Ile Asp Ala
              85                  90                      95
Cys Lys Tyr Pro Leu Asp Gln Leu Gln Glu Tyr Lys Thr Leu Gly Lys
              100                 105                 110
Gly Arg Val Val Ala Asn Leu Pro Tyr His Ile Thr Thr Pro Leu Leu
          115             ·     120                 125
Thr Lys Leu Phe Leu Glu Ala Pro Asp Phe Trp Lys Thr Val Thr Val
          130                 135                 140
Met Val Gln Asp Glu Val Ala Arg Arg Ile Val Ala Gln Pro Gly Gly
145                 150                 155                     160
Arg Asp Tyr Gly Ser Leu Thr Ile Phe Leu Gln Phe Phe Ala Asp Ile
              165                 170                     175
His Tyr Ala Phe Lys Val Ser Ala Ser Cys Phe Tyr Pro Lys Pro Gln
              180                 185                 190
Val Gln Ser Ala Val Ile His Met Lys Val Lys Glu Thr Leu Pro Leu
          195                 200                 205
Ser Asp Glu Glu Ile Pro Val Phe Phe Thr Leu Thr Arg Thr Ala Phe
          210                 215                 220
Gln Gln Arg Arg Lys Val Leu Ala Asn Thr Leu Lys Gly Leu Tyr Pro
225                 230                 235                     240
Lys Glu Gln Val Glu Gln Ala Leu Lys Glu Leu Gly Leu Leu Leu Asn
              245                 250                     255
Val Arg Pro Glu Val Leu Ser Leu Asn Asp Tyr Leu Ala Leu Phe His
              260                 265                 270
Lys Met Gln Ala Gly
          275


        <210> 1061
        <211> 656
        <212> PRT
        <213> Chlamydia pneumoniae


        <400> 1061
Tyr Lys Arg Phe Leu Tyr Ile His Ile Thr Lys Val Met Thr Ser Ser
  1              5                   10                      15
Ser Cys Pro Leu Leu Asp Leu Ile Leu Ser Pro Ala Asp Leu Lys Lys
              20                  25                  30
```

                                    1250

Leu Ser Ile Ser Gln Leu Pro Gly Leu Ala Glu Glu Ile Arg Tyr Arg
              35   40   45
Ile Ile Ser Val Leu Ser Gln Thr Gly Gly His Leu Ser Ser Asn Leu
        50   55   60
Gly Ile Val Glu Leu Thr Ile Ala Leu His Tyr Val Phe Ser Ser Pro
65   70   75   80
Lys Asp Lys Phe Ile Phe Asp Val Gly His Gln Thr Tyr Pro His Lys
                    85   90   95
Leu Leu Thr Gly Arg Asn Asn Glu Gly Phe Asp His Ile Arg Asn Asp
              100   105   110
Asn Gly Leu Ser Gly Phe Thr Asn Pro Thr Glu Ser Asp His Asp Leu
          115   120   125
Phe Phe Ser Gly His Ala Gly Thr Ala Leu Ser Leu Ala Leu Gly Met
      130   135   140
Ala Gln Thr Thr Pro Leu Glu Ser Arg Thr His Val Ile Pro Ile Leu
145   150   155   160
Gly Asp Ala Ala Phe Ser Cys Gly Leu Thr Leu Glu Ala Leu Asn Asn
              165   170   175
Ile Ser Thr Asp Leu Ser Lys Phe Val Val Ile Leu Asn Asp Asn Asn
          180   185   190
Met Ser Ile Ser Lys Asn Val Gly Ala Met Ser Arg Ile Phe Ser Arg
          195   200   205
Trp Leu His His Pro Ala Thr Asn Lys Leu Thr Lys Gln Val Glu Lys
      210   215   220
Trp Leu Ala Lys Ile Pro Arg Tyr Gly Asp Ser Leu Ala Lys His Ser
225   230   235   240
Arg Arg Leu Ser Gln Cys Val Lys Asn Leu Phe Cys Pro Thr Pro Leu
          245   250   255
Phe Glu Gln Phe Gly Leu Ala Tyr Val Gly Pro Ile Asp Gly His Asn
          260   265   270
Val Lys Lys Leu Ile Pro Ile Leu Gln Ser Val Arg Asn Leu Pro Phe
      275   280   285
Pro Ile Leu Val His Val Cys Thr Thr Lys Gly Lys Gly Leu Asp Gln
      290   295   300
Ala Gln Asn Asn Pro Ala Lys Tyr His Gly Val Arg Ala Asn Phe Asn
305   310   315   320
Lys Arg Glu Ser Ala Lys His Leu Pro Ala Ile Lys Pro Lys Pro Ser
          325   330   335
Phe Pro Asp Ile Phe Gly Gln Thr Leu Cys Glu Leu Gly Glu Val Ser
          340   345   350
Ser Arg Leu His Val Val Thr Pro Ala Met Ser Ile Gly Ser Arg Leu
      355   360   365
Glu Gly Phe Lys Gln Lys Phe Pro Glu Arg Phe Phe Asp Val Gly Ile
      370   375   380
Ala Glu Gly His Ala Val Thr Phe Ser Ala Gly Ile Ala Lys Ala Gly
385   390   395   400
Asn Pro Val Ile Cys Ser Ile Tyr Ser Thr Phe Leu His Arg Ala Leu
              405   410   415
Asp Asn Val Phe His Asp Val Cys Met Gln Asp Leu Pro Val Ile Phe
          420   425   430
Ala Ile Asp Arg Ala Gly Leu Ala Tyr Gly Asp Gly Arg Ser His His
      435   440   445
Gly Ile Tyr Asp Met Ser Phe Leu Arg Ala Met Pro Gln Met Ile Ile
      450   455   460
Cys Gln Pro Arg Ser Gln Val Val Phe Gln Gln Leu Leu Tyr Ser Ser
465   470   475   480
Leu His Trp Ser Ser Pro Ser Ala Ile Arg Tyr Pro Asn Ile Pro Ala
              485   490   495
Pro His Gly Asp Pro Leu Thr Gly Asp Pro Asn Phe Leu Arg Ser Pro
          500   505   510

Gly Asn Ala Glu Thr Leu Ser Gln Gly Glu Asp Val Leu Ile Ile Ala
          515   520   525
Leu Gly Thr Leu Cys Phe Thr Ala Leu Ser Ile Lys His Gln Leu Leu
          530   535   540
Ala Tyr Gly Ile Ser Ala Thr Val Val Asp Pro Ile Phe Ile Lys Pro
545   550   555   560
Phe Asp Asn Asp Leu Phe Ser Leu Leu Leu Met Ser His Ser Lys Val
              565   570   575
Ile Thr Ile Glu Glu His Ser Ile Arg Gly Gly Leu Ala Ser Glu Phe
          580   585   590
Asn Asn Phe Val Ala Thr Phe Asn Phe Lys Val Asp Ile Leu Asn Phe
          595   600   605
Ala Ile Pro Asp Thr Phe Leu Ser His Gly Ser Lys Glu Ala Leu Thr
          610   615   620
Lys Ser Ile Gly Leu Asp Glu Ser Ser Met Thr Asn Arg Ile Leu Thr
625   630   635   640
His Phe Asn Phe Arg Ser Lys Lys Gln Thr Val Gly Asp Val Arg Val
              645   650   655

          <210> 1062
          <211> 89
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1062
Phe Gly Ser Leu Met Val Glu Ile His His Lys Asp Pro Ser Leu Lys
1   5   10   15
Lys Leu Phe Ala Leu Gln Gln Ser Leu Glu Thr Leu Asn Ser Leu Ser
          20   25   30
Asp Ile Val Ala Thr Tyr Glu Ala Met Phe Ser Leu Ile Tyr Glu Gly
          35   40   45
Leu Asn Lys Ala Leu Arg Lys Asp Gln Leu Cys Tyr Leu Leu Ser Val
          50   55   60
Asn Ser Lys Gly Glu Leu Leu Lys Ser Pro Ser Gly Asp Pro Ile Val
65   70   75   80
Gln Thr Phe Pro Ile His Pro His His
                  85

          <210> 1063
          <211> 559
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1063
Arg Gly Phe Pro Val Met Ser Ser Pro Pro Gln Ala Val Ala Ser Leu
1   5   10   15
Thr Glu Arg Ile Lys Thr Leu Leu Glu Ser Asn Phe Cys Gln Ile Ile
          20   25   30
Val Lys Gly Glu Leu Ser Asn Val Ser Leu Gln Pro Ser Gly His Leu
          35   40   45
Tyr Phe Gly Ile Lys Asp Ser Gln Ala Phe Leu Asn Gly Ala Phe Phe
          50   55   60
His Phe Lys Ser Lys Tyr Tyr Asp Arg Lys Pro Lys Asp Gly Asp Ala
.65   70   75   80
Val Ile Ile His Gly Lys Leu Ala Val Tyr Ala Pro Arg Gly Gln Tyr
              85   90   95
Gln Ile Val Ala His Ala Leu Val Tyr Ala Gly Glu Gly Asp Leu Leu
          100   105   110
Gln Lys Phe Glu Glu Thr Lys Arg Arg Leu Thr Ala Glu Gly Tyr Phe
          115   120   125

                      1252

Ala Thr Glu Lys Lys Lys Pro Leu Pro Phe Ala Pro Gln Cys Ile Gly
    130   135   140
Val Ile Thr Ser Pro Thr Gly Ala Val Ile Gln Asp Ile Leu Arg Val
145   150   155   160
Leu Ser Arg Arg Ala Arg Asn Tyr Lys Ile Leu Val Tyr Pro Val Thr
              165   170   175
Val Gln Gly Asn Ser Ala Ala His Glu Ile Ser Lys Ala Ile Glu Val
              180   185   190
Met Asn Ala Glu Asn Leu Ala Asp Val Leu Ile Ile Ala Arg Gly Gly
              195   200   205
Gly Ser Ile Glu Asp Leu Trp Ala Phe Asn Glu Glu Ile Leu Val Lys
    210   215   220
Ala Ile His Ala Ser Thr Ile Pro Ile Val Ser Ala Val Gly His Glu
225   230   235   240
Thr Asp Tyr Thr Leu Cys Asp Phe Ala Ser Asp Val Arg Ala Pro Thr
              245   250   255
Pro Ser Ala Ala Ala Glu Ile Val Cys Lys Ser Ser Glu Glu Gln Val
              260   265   270
Gln Val Phe Glu Gly Tyr Leu Arg His Leu Leu Ser His Ser Arg Gln
              275   280   285
Leu Leu Thr Ser Lys Lys Gln Gln Leu Leu Pro Trp Arg Arg Phe Leu
              290   295   300
Asp Arg Ala Glu Phe Tyr Thr Thr Ala Gln Gln Gln Leu Asp Ser Ile
305   310   315   320
Glu Ile Ala Ile Gln Lys Gly Val Gln Gly Lys Ile His Glu Ser Lys
              325   330   335
Gln Arg Tyr Asp Asn Ile Ser Arg Trp Leu Gln Gly Asp Leu Val Ser
              340   345   350
Arg Met Thr Cys Arg Leu Gln Ser Leu Lys Lys Met Leu Ser Gln Ala
              355   360   365
Leu Ser His Lys Ala Leu Ser Leu Gln Val Arg Cys His Gln Leu Lys
    370   375   380
Lys Ser Leu Thr Tyr Pro Arg Gln Ile Gln Gln Ala Ser Gln Lys Leu
385   390   395   400
Ser Pro Trp Arg Gln Gln Leu Asp Thr Leu Ile Ser Arg Arg Leu His
              405   410   415
Tyr Gln Lys Glu Glu Tyr Phe His Lys His Thr Arg Leu Lys His Ala
              420   425   430
His Asn Val Leu Glu Gln Gln Leu Arg Ser His Val Gln Lys Leu Glu
    435   440   445
Leu Leu Gly Arg Arg Leu Ser Arg Gly Cys Glu Leu Asn Leu Gln Asn
    450   455   460
Gln Lys Ile Ala Tyr Ala Asn Val Lys Glu Thr Leu Ala Thr Ile Leu
465   470   475   480
Glu Arg Arg Tyr Glu Asn Ser Val Ala Arg Tyr Ser Ala Leu Lys Glu
              485   490   495
Gln Leu His Ser Leu Asn Pro Lys Asn Val Leu Lys Arg Gly Tyr Ala
              500   505   510
Met Leu Phe Asp Phe Asn Glu Asn Ser Ala Met Ile Ser Val Asp Ser
    515   520   525
Leu Gln Glu Asn Ala Arg Val Arg Ile Gln Leu Gln Asp Gly Glu Ala
    530   535   540
Ile Leu Thr Val Thr Asn Ile Glu Ile Cys Lys Leu Ile Lys Gly
545   550   555

<210> 1064
<211> 271
<212> PRT
<213> Chlamydia pneumoniae

1253

<400> 1064

```
Phe Cys Arg Glu Ser Met Arg Ile Lys Phe Arg Glu Asn Lys Glu Arg
1               5                   10                  15
Lys Met Thr Arg Gln Ser Tyr Val Leu Gly Asn Trp Lys Met His Lys
            20                  25                  30
Thr Ile Gln Glu Ala Lys Glu Tyr Val Gln Thr Leu Ala Ser Leu Leu
            35                  40                  45
Gln Gly Glu Pro Leu Ser Cys Thr Ile Gly Ile Ala Ser Pro Phe Thr
        50                  55                  60
Ser Leu Arg Ala Ile His Glu Val Ile Asn Thr Thr Gly Ala Phe Leu
65                  70                  75                  80
Trp Leu Gly Ala Gln Asn Val His Pro Glu Leu Ser Gly Ala Phe Thr
                85                  90                  95
Gly Glu Ile Ser Leu Pro Met Leu Lys Glu Val Gly Val Glu Phe Val
                100                 105                 110
Leu Val Gly His Ser Glu Arg Arg His Ile Phe Gly Glu Ser Asp Ala
            115                 120                 125
Phe Ile Ala Ser Lys Val Lys Ser Val Ala Gln Ala Gly Leu Val Pro
        130                 135                 140
Val Leu Cys Val Gly Glu Ser Leu Glu Val Arg Glu Glu Gly Lys Ala
145                 150                 155                 160
His Gln Val Ile Lys Lys Gln Leu Leu Leu Gly Leu Glu Gln Met Asp
                165                 170                 175
Asn Gly Ser Glu Phe Leu Ile Ala Tyr Glu Pro Val Trp Ala Ile Gly
            180                 185                 190
Thr Gly Lys Val Ala Glu Ala Ser Asp Val Gln Asp Ile His Met Phe
            195                 200                 205
Cys Arg Glu Val Val Ala Glu Arg Phe Ser Glu Ala Thr Ala Glu Glu
    210                 215                 220
Ile Ser Ile Leu Tyr Gly Gly Ser Val Lys Val Asp Asn Ala Gln Arg
225                 230                 235                 240
Phe Gly Gln Cys Ser Asp Val Asp Gly Leu Leu Val Gly Gly Ala Ser
                245                 250                 255
Leu Glu Gly Gln Ser Phe Phe Glu Val Ala Lys Asn Phe Asn Val
                260                 265                 270
```

<210> 1065
<211> 60
<212> PRT
<213> Chlamydia pneumoniae

<400> 1065

```
Phe Val Arg Val Met Arg Phe Phe Cys Leu Phe Phe Leu Gly Phe Leu
1               5                   10                  15
Gly Ser Phe His Cys Val Ala Glu Asp Lys Gly Val Asp Leu Phe Gly
            20                  25                  30
Val Trp Asp Asp Asn Gln Ile Thr Glu Cys Asp Asp Ser Tyr Met Thr
        35                  40                  45
Glu Gly Arg Glu Glu Val Glu Lys Val Val Asp Ala
    50                  55                  60
```

<210> 1066
<211> 71
<212> PRT
<213> Chlamydia pneumoniae

<400> 1066

```
Arg His Arg Leu Gly Arg His Arg Arg Thr Ser Asp Pro Cys Phe Leu
1               5                   10                  15
Phe Tyr Phe Ser Ile Pro Glu Glu Ser Leu Pro Pro Asp Ser Cys Arg
            20                  25                  30
```

Leu Asn Gln Met Pro Lys His Glu His Leu Pro Ser Ile Leu Leu Lys
              35   40   45
Lys Pro Ile Ile Asp Tyr Leu Lys Ile Thr Ser Ile Tyr Glu Lys Ala
          50   55   60
Ile Phe Asn Thr Gly Leu Pro
65   70

          <210> 1067
          <211> 119
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1067
Ser Met Ser Leu Asn Lys Glu Ile Gly Met Thr Val Leu Phe Tyr Ala
 1   5   10   15
Phe Leu Phe Ile Phe Leu Phe Leu Cys Val Ile Leu Cys Gly Leu Ile
              20   25   30
Leu Val Gln Glu Ser Lys Ser Met Gly Leu Gly Ser Ser Phe Gly Val
              35   40   45
Asp Ser Gly Asp Ser Val Phe Gly Val Ser Thr Pro Asp Ile Leu Lys
          50   55   60
Lys Val Thr Ser Trp Cys Ala Val Ala Phe Cys Ile Gly Cys Leu Leu
65   70   75   80
Leu Ser Phe Ser Thr Asn Leu Leu Gly Lys Lys Leu Asp Ala Lys Glu
                  85   90   95
Phe Leu Leu Pro Ala Ala Glu Glu Ser Asp Thr Gln Ala Ser Ser Glu
              100   105   110
Ser Val Glu Ala Asp Glu Ser
          115

          <210> 1068
          <211> 206
          <212> PRT
          <213> Chlamydia pneumoniae

          <400> 1068
Ile Gln Val Leu Val Val Arg Asp Phe Phe Thr Glu Leu Cys Gln Ala
 1   5   10   15
His Val Gln Thr Met Ile Arg Arg Leu Glu Tyr Tyr Gly Ser Pro Ile
              20   25   30
Leu Arg Lys Lys Ser Ser Pro Ile Ala Glu Ile Thr Asp Glu Ile Arg
          35   40   45
Asn Leu Val Ser Asp Met Cys Asp Thr Met Glu Ala His Arg Gly Val
          50   55   60
Gly Leu Ala Ala Pro Gln Val Gly Lys Asn Val Ser Leu Phe Val Met
65   70   75   80
Cys Val Asp Arg Glu Thr Glu Asp Gly Glu Leu Ile Phe Ser Glu Ser
                  85   90   95
Pro Arg Val Phe Ile Asn Pro Val Leu Ser Asp Pro Ser Glu Thr Pro
              100   105   110
Ile Ile Gly Lys Glu Gly Cys Leu Ser Ile Pro Gly Leu Arg Gly Glu
              115   120   125
Val Phe Arg Pro Gln Lys Ile Thr Val Thr Ala Met Asp Leu Asn Gly
          130   135   140
Lys Ile Phe Thr Glu His Leu Glu Gly Phe Thr Ala Arg Ile Ile Met
145   150   155   160
His Glu Thr Asp His Leu Asn Gly Val Leu Tyr Ile Asp Leu Met Glu
                  165   170   175
Glu Pro Lys Asp Pro Lys Lys Phe Lys Ala Ser Leu Glu Lys Ile Lys
              180   185   190

Arg Arg Tyr Asn Thr His Leu Ser Lys Glu Glu Leu Val Ser
    195   200   205

<210> 1069
<211> 301
<212> PRT
<213> Chlamydia pneumoniae

<400> 1069
Met Ser Cys Met Pro Pro Pro Phe Val Val Thr Leu Thr Thr Ser Ala
1   5   10   15
Gln Asn Asn Leu Arg Asp Gln Leu Lys Glu Lys Asn Phe Ile Phe Ser
            20   25   30
Gln Pro Gln Asn Thr Val Phe Gln Ala Arg Ser Asn Thr Val Thr Cys
        35   40   45
Thr Leu Tyr Pro Ser Gly Lys Leu Val Ile Gln Gly Lys Gly Ser Glu
    50   55   60
Glu Phe Ile Glu Phe Phe Leu Glu Pro Glu Ile Leu His Thr Phe Thr
65   70   75   80
His Ala Arg Val Glu Gln Asp Leu Arg Pro Arg Leu Gly Val Asp Glu
            85   90   95
Ser Gly Lys Gly Asp Phe Phe Gly Pro Leu Cys Ile Ala Ala Val Tyr
        100   105   110
Ala Ser Asn Ala Glu Ile Leu Lys Lys Leu Tyr Glu Asn Lys Val Gln
        115   120   125
Asp Ser Lys Asn Leu Lys Asp Thr Lys Ile Ala Ser Leu Ala Arg Ile
    130   135   140
Ile Arg Ser Leu Cys Val Cys Asp Val Ile Ile Leu Tyr Pro Glu Lys
145   150   155   160
Tyr Asn Glu Leu Tyr Gly Lys Phe Gln Asn Leu Asn Thr Leu Leu Ala
                165   170   175
Trp Ala His Ala Thr Val Ile Asn Asn Leu Ala Pro Lys Pro Ala Gly
            180   185   190
Asp Val Phe Ala Ile Ser Asp Gln Phe Ala Ala Ser Glu Tyr Thr Leu
    195   200   205
Leu Lys Ala Leu Gln Lys Lys Glu Thr Asp Ile Thr Leu Ile Gln Lys
    210   215   220
Pro Arg Ala Glu Gln Asp Val Val Val Ala Ala Ala Ser Ile Leu Ala
225   230   235   240
Arg Asp Ala Phe Val Gln Ser Ile Gln Lys Leu Glu Glu Gln Tyr Gln
                245   250   255
Val Gln Leu Pro Lys Gly Ala Gly Phe Asn Val Lys Ala Ala Gly Arg
            260   265   270
Glu Ile Ala Lys Gln Arg Gly Lys Glu Leu Leu Ala Lys Ile Ser Lys
    275   280   285
Thr His Phe Lys Thr Phe Asp Glu Ile Cys Ser Gly Lys
290   295   300

<210> 1070
<211> 145
<212> PRT
<213> Chlamydia pneumoniae

<400> 1070
Val Ile Met Gln Glu His Ile His Lys Glu Leu Leu His Leu Gly Glu
1   5   10   15
Ile Phe Arg Ser Ser Arg Glu Ser Gln Ser Leu Ser Leu Lys Asp Val
            20   25   30
Glu Ala Ala Thr Ser Ile Arg Tyr Ser Cys Leu Glu Ala Ile Glu Gln
        35   40   45

```
Gly Cys Leu Gly Lys Leu Ile Ser Pro Val Tyr Ala Gln Gly Phe Ile
    50                  55                  60
Lys Lys Tyr Ala Thr Tyr Leu Gly Leu Asp Gly Asp Ser Ile Leu Gln
65                  70                  75                  80
Glu His Pro Tyr Val Met Lys Ile Phe Lys Glu Phe Ser Asp His Asn
                85                  90                  95
Met Glu Met Leu Leu Asp Leu Glu Ser Met Gly Gly Arg Asn Ser Pro
            100                 105                 110
Glu Arg Ala Ile His Ser Trp Ser Asn Leu Trp Trp Ala Gly Leu Ile
        115                 120                 125
Ile Ile Gly Gly Ile Met Val Trp Trp Leu Gly Ser Leu Phe Ser Ile
    130                 135                 140
Phe
145
```

        <210> 1071
        <211> 460
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1071

```
Arg Arg Ser Leu Met Thr Phe Pro Cys Gly Asn Cys Asn Cys Tyr Tyr
  1                 5                  10                  15
Arg Glu Thr Pro Pro Pro Asn Pro Gly Gly Glu Asp Ile Pro Leu Gln
            20                  25                  30
Glu Gly Gly Gln Ser Gly Ser Gln Gly Gly Arg Val Ile Thr Gln Gln
        35                  40                  45
Pro Gly Thr Gly Gly Arg Glu Met Gly Ile Ser Leu Gly Ser Asp Asn
    50                  55                  60
Val Leu Gly Met Val Glu Gln Ala Gly Ser Leu Leu Asn Asn Leu Leu
65                  70                  75                  80
Asp Ser Ala Arg Met Gln Arg Leu Gly His Tyr Cys Tyr Arg Thr Gly
            85                  90                  95
Thr Pro Trp Cys Arg Glu His Cys Pro Gly Phe Leu Gln Trp Ile Trp
            100                 105                 110
Gly Gly Cys Cys Ala Cys Cys Leu Glu Thr Val Asp Asp Pro Asp Asn
        115                 120                 125
Pro Ser Ala Gln Phe Leu Gln Gln Leu Ile Gln Gln Tyr Gly Pro Ile
    130                 135                 140
Cys Val Gly Met Ser Phe Gln Gln Leu Pro His Cys Thr Gln Lys Ile
145                 150                 155                 160
Glu Gln Gly Glu Pro Leu Gly Asp Gly Asp Lys Gln Glu Val Glu Asn
                165                 170                 175
Gly Cys Lys Leu His Arg Glu Leu Leu Lys Ala Ala Gln Pro Arg Cys
            180                 185                 190
Met Gly Glu Ser Leu Val Lys Leu Leu Gln Asn Asn Gly Leu Gly Glu
            195                 200                 205
Asp Met Gln Gln Thr Pro Pro Trp Ser Leu Ile Leu Gln Ala Val Ser
    210                 215                 220
Glu Gly Ala Leu Ser Phe Val Thr Ser Ser Asp Asn Pro Pro Thr Cys
225                 230                 235                 240
Trp Ile Leu Gln Pro Glu Gln Gln Pro Cys Pro Pro Pro Thr Asp
                245                 250                 255
Glu Glu Gln Leu Gln Gly Ala Val Gly Gly Ala Pro Ala Pro Gln Gln
            260                 265                 270
Lys Lys His Pro Ala Gln Glu Cys Arg Val Thr Cys Lys Leu Asn Phe
        275                 280                 285
Arg Thr Leu Leu Gln Lys Leu Ser Arg Leu Glu Val Leu Ser Leu Glu
    290                 295                 300
Ser Gly Tyr Lys Gly Pro Leu Gly Gln Ala Ala Lys Gln Ile Val Asp
305                 310                 315                 320
```

                                    1257

Leu Ile Lys Lys Ser Leu Lys Arg Leu Val Ala Ser Asp Leu Ala Thr
              325   330   335
Phe Leu Gly Pro Gly Ile Gly Leu Ser Leu Glu Ser Gln Val Phe Glu
              340   345   350
Val Leu Val Leu Leu Cys Leu Leu Ser Lys Gly Tyr Leu Pro Leu Asp
              355   360   365
Pro Leu His Pro Glu Gln Thr Val Leu Asp Pro Arg Val Gln Gly Pro
          370   375   380
Trp Gln Arg Ile Leu Arg Lys Val Leu Val Thr Thr Thr Ala Gly Glu
385   390   395   400
Asn Ile Trp Arg Gln Thr Gln Gly Glu Ala Pro Arg Gln Ala Pro Pro
              405   410   415
Pro Pro Asp Pro Trp Asp Asp Asp Glu Ile Glu Arg Asp Gly Ile Val
              420   425   430
Thr Gly Gly Gly Phe Gly Ile Pro Cys Gln Cys Leu Arg Cys Trp Arg
              435   440   445
Lys Leu Pro Thr Glu Lys Arg Pro Asn Arg Trp Leu
    450   455   460

        <210> 1072
        <211> 484
        <212> PRT
        <213> Chlamydia pneumoniae

        <400> 1072
Lys Gly Thr Thr Met Val Cys Pro Asn Asn Ser Trp Phe Arg Met Cys
1   5   10   15
Gly Asn Phe Asn Cys Glu Trp Val Glu Val Thr Thr Thr Glu Glu Thr
              20   25   30
Thr Arg Gln Ser Ala Ser Asp Ile Ser Glu Glu Ala Gly Ser Ser Gly
          35   40   45
Gly Ala Ala Pro Ile Thr Thr Gln Pro Thr Lys Ile Thr Lys Val Glu
          50   55   60
Lys Arg Val Gln Phe Asn Thr Ala Gln Gly Asp Glu Ser Thr Ile His
65   70   75   80
Met Ile Gln Glu Ala Gly Glu Leu Val Asp Ser Ile Leu Ser His Arg
              85   90   95
Arg Thr Gln Gly Cys Thr Glu Tyr Cys Tyr Asp Ser Tyr Ala Thr Gly
          100   105   110
Cys Gly Gln Arg Cys Gly Ser Phe Gly Arg Leu Ile Cys Gly Thr Tyr
          115   120   125
Lys Ala Cys Cys Leu Asp Arg Glu Asp Asn Gln Val Ala Gly Leu Val
      130   135   140
His Glu Cys Glu Gln Thr His Gly Pro Ile Ala Val Ala Leu Ala Ala
145   150   155   160
Lys Thr Met Gly Leu Asn Leu Met Glu Leu Val Glu Lys Asn Thr Ile
              165   170   175
Leu Ser Glu Glu Gln Lys Asn Glu Phe Arg Gln His Cys Ser Glu Ala
          180   185   190
Lys Thr Gln Leu Tyr Gly Thr Met Gln Ser Leu Ser Gln Asn Phe Phe
      195   200   205
Leu Glu Gly Val Asn Ser Ile Arg Glu Arg Gly Leu Asp Asp Ser Leu
    210   215   220
Val Gln Ala Val Leu Ser Phe Ile Ala Thr Arg Ser Trp Glu Lys Thr
225   230   235   240
Ile Glu Ser Glu Glu Ala Ser Gly Thr Ser Ser Ala Ser Asn Ser Thr
              245   250   255
Arg Ile Pro Ala Cys Tyr Ile Leu Asn Thr Ser Pro Leu Thr Thr Ser
          260   265   270
Arg Leu Ser Cys Gly Ser Arg Asp Ala Arg Arg Pro Ser Ser Val Gly
      275   280   285

                              1258

```
Ala Glu Pro Gln Tyr Val Ala Lys Lys Tyr Asn Asp Asn Gly Met Ala
    290                 295                 300
Arg Gln Leu Gly Lys Ile Gln Val Thr Asn Leu Lys Thr Gly Asp Phe
305                 310                 315                 320
Ser Ala Leu Gly Pro Phe Gly Leu Leu Ile Val Lys Met Leu Asn Ser
                325                 330                 335
Phe Leu Leu Ser Ala Ser Gln Ser Thr Ser Ser Ile Leu Lys His Thr
            340                 345                 350
Gly Gly Glu Ile Cys Tyr Thr Cys Pro Asn Phe Arg Asp Ile Val Val
        355                 360                 365
Leu Leu Met Leu Ala Ile Gly Tyr Cys Pro Ala Asn Thr Asp Glu Thr
    370                 375                 380
Ser Val Val Asp Ile His Met Ile Asp Asp Pro Ile Met Thr Ile Phe
385                 390                 395                 400
Tyr Arg Leu Gln Tyr Ser Tyr Arg Thr Gly Lys Thr Ser Ala Ser Phe
                405                 410                 415
Leu Lys Lys Lys Pro Ser Leu Val Arg Gln Glu Ser Leu Asp Cys Pro
            420                 425                 430
Thr Pro Ala Glu Ser Val Pro Leu Met Ser Ser Leu Glu Glu Glu Asp
        435                 440                 445
Glu Asn Glu Asp Asp Asp Glu Asp Gly Asn Leu Ala Tyr Gln Gln Arg
    450                 455                 460
Ile Leu Glu Cys Ser Gly His Leu Gln Thr Leu Phe Leu Gly Ile Lys
465                 470                 475                 480
Ile Asn Lys Glu


    <210> 1073
    <211> 304
    <212> PRT
    <213> Chlamydia pneumoniae


    <400> 1073
Lys Ile Asp Tyr Ile Leu His Ala Asn Trp Cys Cys Trp Lys Gln Met
1               5                   10                  15
Leu Lys Ile Gln Lys Lys Arg Met Cys Val Ser Val Val Ile Thr Val
            20                  25                  30
Gly Ala Ile Val Gly Phe Phe Asn Ser Ala Asp Ala Ala Pro Lys Lys
        35                  40                  45
Lys Lys Ile Pro Ile Gln Ile Leu Tyr Ser Phe Thr Lys Val Ser Ser
    50                  55                  60
Tyr Leu Lys Asn Glu Asp Ala Ser Thr Ile Phe Cys Val Asp Val Asp
65                  70                  75                  80
Arg Gly Leu Leu Gln His Arg Tyr Leu Gly Ser Pro Gly Trp Gln Glu
                85                  90                  95
Thr Arg Arg Arg Gln Leu Phe Lys Ser Leu Glu Asn Gln Ser Tyr Gly
            100                 105                 110
Asn Glu Arg Leu Gly Glu Glu Thr Leu Ala Ile Asp Ile Phe Arg Asn
        115                 120                 125
Lys Glu Cys Leu Glu Ser Glu Ile Pro Glu Gln Met Glu Ala Ile Leu
    130                 135                 140
Ala Asn Ser Ser Ala Leu Val Leu Gly Ile Ser Ser Phe Gly Ile Thr
145                 150                 155                 160
Gly Ile Pro Ala Thr Leu His Ser Leu Leu Arg Gln Asn Leu Ser Phe
                165                 170                 175
Gln Lys Arg Ser Ile Ala Ser Glu Ser Phe Leu Leu Lys Ile Asp Ser
            180                 185                 190
Ala Pro Ser Asp Ala Ser Val Phe Tyr Lys Gly Val Leu Phe Arg Gly
        195                 200                 205
Glu Thr Ala Ile Val Asp Ala Leu Ser Gln Leu Phe Ala Gln Leu Asp
    210                 215                 220
```

1259

Leu Ser Pro Lys Lys Ile Ile Phe Leu Gly Glu Asp Pro Glu Val Val
225   230   235   240
Gln Ala Val Gly Ser Ala Cys Ile Gly Trp Gly Met Asn Phe Leu Gly
            245   250   255
Leu Val Tyr Tyr Pro Ala Gln Glu Ser Leu Phe Ser Tyr Val His Pro
            260   265   270
Tyr Ser Thr Ala Thr Glu Leu Gln Glu Ala Gln Gly Leu Gln Val Ile
        275   280   285
Ser Asp Glu Val Ala Glu Leu Thr Leu Asn Ala Leu Pro Lys Met Asn
    290   295   300

<210> 1074
<211> 273
<212> PRT
<213> Chlamydia pneumoniae

<400> 1074
Met Arg Arg Tyr Leu Phe Met Val Leu Ala Leu Cys Leu Tyr Arg Ala
1   5   10   15
Ala Pro Leu Glu Ala Val Val Ile Lys Ile Thr Asp Ala Gln Ala Val
        20   25   30
Leu Lys Phe Ala Arg Glu Lys Thr Leu Val Cys Phe Asn Ile Glu Asp
        35   40   45
Thr Val Val Phe Pro Lys Gln Met Val Gly Gln Ser Ala Trp Leu Tyr
    50   55   60
Asn Arg Glu Leu Asp Leu Lys Thr Thr Leu Ser Glu Glu Gln Ala Arg
65   70   75   80
Glu Gln Ala Phe Leu Glu Trp Met Gly Ile Ser Phe Leu Val Asp Tyr
            85   90   95
Glu Leu Val Ser Ala Asn Leu Arg Asn Val Leu Thr Gly Leu Ser Leu
            100   105   110
Lys Arg Ser Trp Val Leu Gly Ile Ser Gln Arg Pro Val His Leu Ile
        115   120   125
Lys Asn Thr Leu Arg Ile Leu Arg Ser Phe Asn Ile Asp Phe Thr Ser
        130   135   140
Cys Pro Ala Ile Cys Glu Asp Gly Trp Leu Ser His Pro Thr Lys Asp
145   150   155   160
Thr Thr Phe Asp Gln Ala Met Ala Ile Glu Lys Asn Ile Leu Phe Val
            165   170   175
Gly Ser Leu Lys Asn Gly Gln Pro Met Asp Ala Ala Leu Glu Val Leu
            180   185   190
Leu Ser Gly Ile Ser Ser Pro Pro Ser Gln Ile Ile Tyr Val Asp Gln
            195   200   205
Asp Ala Glu Arg Leu Arg Ser Ile Gly Ala Phe Cys Lys Lys Ala Asn
        210   215   220
Ile Tyr Phe Ile Gly Met Leu Tyr Thr Pro Ala Lys Gln Arg Val Glu
225   230   235   240
Ser Tyr Asn Pro Lys Leu Thr Ala Ile Gln Trp Ser Gln Ile Arg Lys
            245   250   255
Asn Leu Ser Asp Glu Tyr Tyr Glu Ser Leu Leu Ser Tyr Val Lys Ser
            260   265   270
Lys